

# THE MINERAL INDUSTRIES OF EUROPE AND CENTRAL EURASIA

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As a subset of the Eurasian landmass, Europe and Central Eurasia encompass continental territory that extends from the Atlantic coast of Europe to the Pacific coast of the Russian Federation and includes the British Isles and Iceland. Greenland in the northwestern Atlantic Ocean and Sakhalin and Kurile Islands in the Pacific Ocean are political extensions of Denmark and the Russian Federation respectively.

The post-Cold War European and Central Eurasian environment (1990-2002) included new political and economic configurations and trends. In the countries of Central Europe (the Czech Republic, Hungary, Poland, and Slovakia), the Balkans (Albania, Bosnia and Herzegovina, Croatia, Macedonia, Serbia and Montenegro, and Slovenia), Central Eurasia [the Commonwealth of Independent States (CIS) (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Uzbekistan and Ukraine)], and the Baltic countries (Estonia, Latvia, and Lithuania), transitions from authoritarian governments and central economic planning (depending on the country) were on a scale from showing little or no progress to having instituted open political systems and market-based economies.

The CIS was founded initially in 1991 by several republics of the former Soviet Union (FSU) to promote free economic space in the FSU region; it does not have supranational powers, and its member countries have equal standing in international law. The Central European Free Trade Agreement (CEFTA) was founded on December 21, 1992, by Czechoslovakia (now the Czech Republic and Slovakia), Hungary, and Poland. The chief purpose of CEFTA was to harmonize all spheres of economic relations among the member countries in conformity with standards and principles promulgated by the General Agreement on Tariffs and Trade (GATT) and the World Trade Organization (WTO). CEFTA members also viewed the organization as a necessary first step toward ultimate accommodation within Western European political and economic structures. Slovenia, Romania, and Bulgaria joined CEFTA in 1996, 1997, and 1999, respectively.

Economic integration in Western Europe evolved into the formation of the European Union (EU), which was a supranational entity that comprised Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom. The admission of new member countries (CEFTA) members and other countries in the region has been one of the significant political questions that has faced the leadership of the EU. The European Community (EC) opened accession negotiations in 2000 with Bulgaria, Latvia Lithuania, Malta, Romania, Slovakia, and Turkey. The EC was negotiating formally with Cyprus, the Czech Republic, Estonia, Hungary, Poland, and Slovenia; membership was expected to be extended to these countries by 2004. This would represent the single largest EU enlargement; the last enlargement was in 1995 when Austria, Finland, and Sweden acceded. Candidate countries face great challenges because they must fulfill such political and economic criteria as achieving stability of institutions guaranteeing democracy, the rule of law, human rights, and respect for and protection of minorities; have a functioning market economy and the capacity to cope with competitive pressure and market forces within the EU; and be able to take on the obligations of EU membership, which included adherence to the aims of political, economic, and monetary union.

These issues, as well as others, have made the integration of even the more transitionally advanced formerly centrally planned economy countries slow and contingent on structural conformity with EU norms. Because of the very different paths of development that countries in Western Europe and those in Central Eurasia, Central Europe, and the Balkans followed after the Second World War, an economic asymmetry between these two areas emerged and remained throughout the post-Cold War period of the 1990s. This asymmetry framed the initial commercial relationship in the minerals sphere between the two areas. Western Europe imported raw materials from, toll-smelted raw materials in, sold equipment and technology to, and invested in the mineral development projects in the formerly centrally planned economy countries, largely without reciprocal activities on the part of the latter.

Europe and Central Eurasia remained a substantial participant in the world mineral economy by occupying important roles as a supplier and consumer of all major mineral commodity groups. In 2002, Western Europe continued to be a major world processing and consuming region and accounted for a significant share of world production and consumption of ferrous and nonferrous metals, whereas Central Eurasia remained a major world supplier of minerals. Central Europe played a much lesser role with respect to supply and disposition of most mineral commodities.

Western Europe, which had a population of more than 390 million, had one of the most advanced regional economies in the world. The gross domestic product (GDP), based on purchasing power parity, amounted to about \$9.8 trillion. Although its population was about one-third larger than that of the United States, its GDP was about \$1 trillion less than that of the United States.

On January 1, 1999, the EU adopted the euro (€) as its new single currency for the member states that satisfied the macroeconomic conditions necessary to join the European Monetary Union (EMU). Euro banknotes and coins entered into circulation in January 2002. Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain were to be the initial EC member countries to use the euro. Not yet part of the EMU were Denmark, Sweden, and the United Kingdom.

As a major world mineral processing and consuming region, Western Europe remained a determinant of world demand for all mineral commodities. With the near exhaustion of its mineral reserves and the decline in its role as a world mine producer of minerals, Western Europe continued to be a major producer of metals, which included copper, iron, lead, and zinc, by using largely imported raw materials and secondary materials; its mineral processing and manufacturing industries also accounted for a significant share of world production of semimanufactured and fabricated ferrous and nonferrous metals. Germany remained Western Europe's dominant smelter and refiner of most metals.

In 2002, the mineral industries in Western Europe were either maintaining a stable level of output or reducing output. A decrease in output in most mineral industries was expected in the next decade as reserves were being depleted and processing facilities and plants were becoming older and not being renovated or replaced. Despite the diminution of Western Europe's importance as a mining region, the area was an important world financial center and the headquarters of such major global mining transnationals such as Anglo American S.A., Billiton plc, and Rio Tinto plc.

Western Europe played a significant role in world in the extraction and processing of certain industrial minerals and mineral fuels. Significant petroleum and natural gas resources have been developed in the North Sea, and coal reserves were adequate. Germany remained a significant mine producer of a number of industrial minerals and coal.

In contrast to Western European countries, the transitional economy countries of Central Eurasia and Central Europe, which had a combined population of more than 400 million, had a combined GDP, based on purchasing power parity, of almost \$3 trillion, or about one-third that of Western Europe and slightly more than one-fourth that of the United States.

The countries of the CIS collectively had an extensive minerals economy that accounted for a major share of the world's extraction of fuels, metals, and industrial minerals and the production of processed mineral products, which included those of metals and refined petroleum. Although domestic demand for mineral products was reviving in the CIS, consumption of most mineral products remained far below the levels that had existed prior to the breakup of the Soviet Union and well below the levels of advanced industrialized countries.

In 2002 in the CIS, the trend in the region of economic stabilization continued, which found expression in the continued growth in macroeconomic indicators that included growth in the GDP, industrial output, and capital investment. The CIS remained a major world producer of such nonferrous metals as primary aluminum, alumina, mined and refined copper, mercury, titanium raw material and metal, and tungsten and of such precious metals as gold, palladium, platinum, and silver. The CIS had a significant share of the world output of such ferrous metals as chromite, iron ore, manganese ore, mine output of nickel and refined nickel, and pig iron. The CIS produced a significant share of the total world production of such industrial minerals such as nitrogen (in ammonia), phosphate rock, potash, and sulfur and was a leading world producer of such fuels as coal, natural gas, petroleum, and uranium.

Russia, which encompasses about 75% of the territory of the CIS, had the largest mineral industry, which produced a broad range of crude and processed mineral commodities. The largest and most diverse mineral industries were in, order of production, Russia, Kazakhstan, and Ukraine. Azerbaijan, Kyrgyzstan, Uzbekistan, and several other CIS countries also were important producers and processors of minerals. According to data and estimates available for this report, in 2002, Russia ranked first in the world in the production of asbestos, natural gas, nickel, palladium, and titanium sponge; second in the world in the production of aluminum, mine output of antimony, beryl, platinum, potash, crude petroleum, and mine output of tungsten; and among the top five leading world producers of such mineral commodities as boron, cobalt, gem and industrial diamonds, gold, iron ore, phosphate rock, and sulfur and of ferroalloys, magnesium metal, and crude steel.

Kazakhstan was a significant producer of such mineral products as arsenic, barite, beryllium metal, bismuth, cadmium, chromite, copper, ferroalloys, lead, titanium sponge, uranium, and zinc. Ukraine was a significant producer of such mineral products as ferroalloys, iron ore, manganese ore, pig iron, crude steel, and titanium raw materials. Other CIS countries were significant world producers of one or more mineral commodities; these countries included Azerbaijan (oil), Armenia (molybdenum), Belarus (potash), Kyrgyzstan (antimony metal and mercury ore and metal), Tajikistan (aluminum), Turkmenistan (natural gas), and Uzbekistan (gold and uranium). All the CIS countries produced a range of other mineral commodities.

The countries of the Caspian Sea region were of great importance to world energy markets because of the large oil and gas reserves in this region that were being developed. These resources have created competition among countries concerning their ownership, companies to get development rights, and countries to establish export routes. Proven oil reserves for the entire Caspian Sea region, which were estimated to be between 18 billion and 35 billion barrels (Gbbbl), were comparable to those of the United States (22 Gbbbl) and greater than those in the North Sea (17 Gbbbl); undiscovered oil resources could yield another 235 Gbbbl of oil (U.S. Energy Information Administration, 2000§<sup>1</sup>, 2001§, 2003b§).

For the Caspian Sea region to be developed to its full oil and gas potential, the littoral states must agree on the legal status of the Sea so that the issue of the ownership of resources can be resolved. No agreed-upon convention signed by all littoral states exists that delineates the littoral states' ownership of the Sea's resources or their development rights. Several conflicts have arisen over claims to regions of the Sea. Disputes concerned whether the resources in the Caspian should be shared in common by all littoral states or if the Caspian Sea should be divided into national sectors. Negotiations between the littoral states have made slow progress in resolving these differences. Division into national sectors has been the de facto solution, but disputes have arisen over the delineation of these national sectors.

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<sup>1</sup>References that include a section mark (§) are found in the Internet References Cited section.

## Legislation

The countries of Western Europe have no common mineral policy. The mining legislation of the different countries of the EU and Europe as a whole differ widely in objectives and regulatory details. Even though the EC is not involved in the harmonization of the various countries' mining laws, this involvement is, nevertheless, taking place owing mainly to increased competition for mining and exploration investments.

Legislation has been set in place that enables the integration of Central Europe's mineral industry with that of the world economy and has been attracting investment from outside the subregion. In Central Eurasia, legislation has been enacted to enable mineral-producing enterprises to respond to market forces and to attract investment. Clearer laws and regulations and more-consistent enforcement have enabled business transactions in the region to become more routine. As in other emerging markets, however, investors find that there market barriers are still substantial and that they can encounter problems with the resolution of business disputes.

## Exploration

Exploration budgets for Asia, Europe, and the FSU as a whole increased by about 13%. These regions accounted for more than 11% of the total world exploration budget (Metals Economics Group, 2003). On the basis of data compiled by the U.S. Geological Survey (USGS) that reflected the number of sites being explored, activity in this region focused on, in order of decreasing activity, Sweden, Finland, Romania, and Russia.

Gold exploration activity focused on Bulgaria, Ireland, Romania, Russia, and Spain. In Russia, exploration for nonfuel minerals focused on diamonds, gold, and platinum-group metals (PGM). Russia, which was a world leader in the production of oil and gas, increased in production was being obtained mainly from deposits already being exploited. Major exploration is, therefore, needed to sustain increased hydrocarbon production levels for longer than a 5-year period. Major Russian oil companies, with the exception of Surgutneft, had not engaged in significant exploration. Most exploration was being conducted by small- and middle-sized firms. In Central Asia, which was a major hydrocarbon-producing region, exploration was continuing for oil and gas deposits offshore in the Caspian Sea and onshore (Leslie Dienes, Professor, Department of Geography, University of Kansas, unpub. data, 2004).

In Ireland, Navan Mining plc continued to explore for gold at the Krumovgrad AdZ Tepe and the Kuklits prospects. Completed exploratory work had determined resources to be 6.1 million metric tons (Mt) of ore with an average grade of about 4.6 grams per metric ton (g/t) gold.

In 2002, exploration continued for precious and base metals in Bulgaria and Romania. Major activities in Bulgaria's gold mining and exploration sector included the continuing exploration for gold by Hereward Ventures plc of the United Kingdom at the company's 189-square-kilometer Rosino permit. Within the permit area, work was directed mainly on the Tashlaka Hill region but also included exploration in the Byalgradets, the Kostilkovo, and the Lensko areas, which confirmed and expanded earlier Government estimates of gold resources in these areas to at least about 23,300 kilograms (750,000 troy ounces) of gold.

The new Bulgarian manganese exploration and mining company Batova AD planned exploration work to discover new reserves at Obrochishte. If successful, then Batova AD would produce as much as 500,000 metric tons per year (t/yr) of manganese during a 20- to 25-year period. The Obrochishte ore body is mainly the carbonite type (rhodocrosite) hosted in Oligocene-age volcanosedimentary deposits (aleurolite, clay, glauconitic sandstone, marl, and tuff).

In Romania, European Goldfields Ltd. continued exploration work at Certej. Gold resources at the Certej deposit were estimated to be about 44 Mt of ore at a grade of 1.9 g/t gold.

Major development in Poland involved Kombinat Gorniczo Hutniczy Miedzi (KGHM) "Polska Miedz" S.A.'s survey and study of the Glogow Gleboki copper ore deposit. The latest assessment of the Glogow Gleboki deposit estimated reserves to be about 204 Mt of ore, which contained more than 5 Mt of copper.

## Production

The data presented below in the commodity overview section were obtained from table 4 and from comparable data and the summary tables in the Minerals Yearbook, volume III (Europe and Central Eurasia), from 1990 to 2001.

In general, data that report the recovery of secondary copper and other metals in the Balkans, Central Eurasia, and Central Europe have not been well-documented. The data on secondary metals recovery in the tables in this chapter, therefore, do not reflect the total recovery of secondary metals in the countries of these subregions.

Additionally, this report includes an outlook component in the commodity overview section below. The commodity outlooks for 2003, 2005, and 2007 were based on reported, planned, or in-progress changes to net production capacities for selected mineral commodities among those reviewed in this report.

The commodity outlooks are based upon projected trends that could affect current producing facilities and planned new facility capacities that the consortia, Governments, or operating companies have projected to come online within the projected time frames. Forward-looking information, which includes estimates of future production, exploration, and mine development, costs of capital projects, and timing of commencement of operations, is subject to a variety of risks and uncertainties that could cause actual events or results to differ materially from the projected results. As such, projects listed in the following section are presented as an indication of current industry plans and not a USGS prediction of what will occur.

## Commodity Overview

### *Metals*

With a high social and industrial development base but a static demographic picture, Western Europe is expected to continue to rely less on domestic mining for most metals and more on imported ore and concentrates of ferrous and nonferrous metals. An increased use of secondary metals also will reduce reliance on primary raw materials. Most production increases in this area likely will be associated with increased exports stemming from rising demand for Western European-made durables and consumer products outside the area. Domestic consumption should not be expected to rise in the near future.

In contrast to Western Europe, almost all the countries in Central Europe have a significantly lower base of development with respect to markets, industrial efficiency, commercial and social infrastructure, and per capita GDP. The transitional process to market economies that would be more in accord with those of Western Europe will continue, which will require major upstream inputs of iron and steel and nonferrous metals to modernize the area's industries and infrastructure. Consequently, increasing consumption of these metals is to be anticipated. This area does have local resources of such nonferrous metals as bauxite, copper, lead, and zinc whose outputs should increase to meet most rising consumption requirements. Central Europe, however will continue to rely on imports of iron ore and concentrate from the CIS and the EU. Also, a drawdown on stocks of iron and steel scrap for domestic consumption should increase to meet the changing profiles of the areas steel industries.

Led by Russia, Kazakhstan, and Ukraine, the CIS, will, for the foreseeable future, remain a major supplier of most ferrous, nonferrous, and precious metals to the world market. An increase in domestic consumption of these commodities, which had fallen sharply since the breakup of the Soviet Union, would be of great significance to the development of the mineral industries of this region.

**Aluminum and Bauxite and Alumina.**—Despite a level of output of bauxite that was less than one-tenth of total world production, Central Eurasia and Western Europe accounted for about one-third and one-fifth, respectively, of total world output of alumina and primary aluminum. Roughly equal shares of alumina and primary aluminum were contributed by Central Eurasia and Western Europe. Russia remained Central Eurasia's main producer of primary aluminum and accounted for almost 90% of the subregion's production in 2002 (table 4). Western Europe, which remained the primary producer of secondary aluminum in the region, contributed about 80% of Europe and Central Eurasia's output of secondary aluminum. In 2002, the region contributed more than one-half of the total reported world production of secondary aluminum. Western Europe also showed apparent steady growth with respect to its share of the total world recovery of secondary aluminum; its share steadily increased to more than one-half from less than one-third of the world's output for secondary aluminum between 1998 and 2002.

On the basis of reported ongoing and planned facility expansion and/or decommissioning, net changes in production capacity for primary and secondary aluminum for the region through 2007 indicate steady potential production increases. Iceland and Norway were positioned as major elements in those increases. Owing to its abundance of geothermal energy and hydroelectric power, Iceland was attractive to aluminum producers. In 2002, a 280,000-t/yr aluminum smelter at Reydarfjordur was proposed by North Icelandic Co. Ltd. Alcoa Inc. also proposed building a 295,000-t/yr smelter at Reydarfjordur. In Iceland, Atlans nfall also was considering building a 300,000-t/yr aluminum smelter. In Norway, Hydro Aluminum of Norway was considering building a 300,000-t/yr aluminum smelter.

A steady increase of Russia's substantial aluminum smelting capacities is projected, thereby contributing to the region's positive outlook for aluminum production during this period. In conjunction with its development of the Sredne Timan bauxite deposit in the Komi Republic in the northwestern part of Russia, Russia's SUAL Holding Management Company was planning to build a 300,000-t/yr aluminum smelter in the region. SUAL planned to invest more than \$500 million in its Irkutsk smelter in Siberia between 2005 and 2010; this should double output capacity at Irkutsk to about 486,000 t/yr (Interfax Mining and Metals Report, 2004l). Russian Aluminum Company (RUSAL) began construction of a second aluminum smelter in Sayanogorsk in Siberia with a capacity of 310,000 t/yr. In Kazakhstan, plans called for the construction of a 240,000-t/yr-capacity aluminum smelter; the first stage with a capacity of 60,000 t/yr was slated for startup in 2007. It would be supplied with alumina from the Pavlodar alumina refinery in Kazakhstan (Interfax Mining and Metals Report, 2004m). Russia was also planning to double the amount of aluminum used in secondary aluminum production to between 250,000 to 300,000 t/yr, although no specific date was given for achieving this goal (Prokopov, 2003). Aluminum production also was projected to increase in Central Europe with the reconstruction and increased capacity at the Mostar aluminum plant in Bosnia and Herzegovina and the working up to aluminum production capacity in Hungary and Serbia and Montenegro.

CIS bauxite production is expected to be sufficient to meet the needs of at least one-fourth of the expected output of primary aluminum from 2002 to 2007. Imports of alumina and bauxite should continue to be the region's main source of raw materials for aluminum production. The major increase in bauxite production in the region was projected to come from Russia where SUAL's plans for the development of the Sredne Timan bauxite deposit in the Komi Republic called for production capacity to initially increase to 2.5 million metric tons per year (Mt/yr) from 1 Mt/yr. SUAL's plans call for a further expansion of production capacity at Sredne Timan to either 4 Mt/yr or 6 Mt/yr. In Central Europe, foreign investment could result in the reconstruction of bauxite mining capacity in Serbia and Montenegro.

**Copper.**—In 2002, mine production of copper in Europe and Central Eurasia amounted to more than 10% of total world production. The Balkans, Central Eurasia (Kazakhstan and Russia), and Central Europe (mainly Poland) were the chief areas of regional mine production.

Although Western Europe was only a minor mine producer of copper, the subregion produced a significant share of total world output of primary refined copper (about 10%) and secondary refined copper (about 15%). Belgium remained the leading producer of primary refined copper in Western Europe; the next largest producers were, in order of output, Spain, Sweden, and France. Germany was the largest producer of secondary refined copper in Western Europe.

Central Eurasia and Central Europe contributed almost 10% and almost 5%, respectively, of total world production of primary refined copper. Russia remained the major producer of refined copper in Central Eurasia. Kazakhstan was also a major producer but with about one-half the production of Russia. Primary refined copper production in Central Europe remained at about the same level compared with that of 2001; the subregion's ranking remained less than 5% of total world production. Poland, which remained the area's main producer of primary refined copper with more than 80% of the subregion's output, saw primary refined copper rise by about 2% compared with that of 2001. Development and expansion of mine production of copper in conjunction with the reported ongoing and planned mine closures in Central Eurasia and Europe and could result in a net increase of copper production of about 300,000 metric tons (t) by 2007. Kazakhstan, Poland, Portugal, and Russia appeared to be the countries where production growth could occur in their respective subregions.

In 2002, Russia ranked among the top 10 copper-producing nations in the world. MMC Noril'sk Nickel, which was the country's major copper mining enterprise, was seen as the principal vehicle to lead the expansion of mine production of copper by 2007. In 2002, Noril'sk produced more than 70% of Russia's copper. Planned mining expansion at Noril'sk to increase the output of PGM would increase the output of copper because mining would transition from nickel-rich to copper-rich ores, which also have a high PGM content.

Construction of new copper mining capacity was also taking place in the Urals region of Russia with the development of the Severo-Podol'skiy, the Sibayskiy, the Uchalinskiy, the Uzel'ginskiy, the Vostochno-Semenovskiy, and other mines. Russia's shortage of copper concentrates, however, would remain and reportedly could only be remedied by the development of the Udokan copper deposit in the Trans-Baikal region of Russia.

In Kazakhstan, investment was going to develop copper reserves. Kazakhmys was developing new capacity for mining 10 Mt/yr of ore, which included developing capacity for mining 4 Mt/yr of ore at the Nurkazganskiy and the Zhaman-Aubatskiy Mines (Kozyrev and Karmanov, 2003).

Poland, which was the major mine producer of copper in Central Europe, was expected to continue its efforts to increase copper production. In Serbia and Montenegro, Mytilineous SA of Greece was seeking investment for renovating and modernizing the Bor mining complex. In Bulgaria and Serbia and Montenegro growth in refined copper production could occur as investors seek to process copper ores not only to produce copper, but also to produce byproduct gold.

In Western Europe, which was not a significant copper mining region, a significant production was expected only in Portugal (Socisdale Mineira de Neves Corvo, SA-Neves-Corvo copper mine) where production was still expanding. The subregion appears set to reduce the output of refined copper by about 10% during the period until 2007.

**Gold.**—In 2002, Central Eurasia remained the dominant producing area and accounted for more than 90% of the region's total output of gold; output was projected to increase through 2007. In 2002, the leading gold producers were, in order of output, Russia, Uzbekistan, Kazakhstan, and Kyrgyzstan. Kazakhstan's gold production was, to a much greater degree, of byproduct gold associated with the country's nonferrous metals production.

After Russia, Uzbekistan was the second ranked producer of gold in Europe and Central Eurasia. Gold was mined primarily at the Muruntau deposit and also recovered from the mine's tailings, which had accumulated during the years. Newmont Mining Corp. of the United States continued to process these tailings as part of a joint venture (50%) with the Uzbek Government. Production by the joint venture was decreasing because of a decline in ore quality.

After Kazakhstan, Kyrgyzstan was the fourth ranked regional producer of gold owing to the development of the Kumtor deposit. Kumtor's gold ore was worked by a joint venture with Canada's Cameco Corporation. Reserves at the Kumtor deposit have been estimated to be more than 250 t of contained gold.

Central Eurasia, led by Russia, would continue to be the region's main gold-producing area. By 2007, gold output in Russia, Kazakhstan, Kyrgyzstan, and Uzbekistan could increase. Russia had large quantities of undeveloped reserves with which it could increase output. Plans called for Uzbekistan to increase gold production by about 15 t/yr with the development of the Daugyztau and the Kokpatas deposits (Kucherskiy, 2003).

**Iron Ore.**—Russia and Ukraine were the region's major iron ore producers. As of January 1, 2002, according to official Russian reserve calculations, Russia had 172 iron ore deposits with a reserve base that totaled 56.6 billion metric tons (Gt) with an average iron content of 35.87% and reserves that totaled about 25 Mt. The largest percentage of these reserves (87%) are located in 35 deposits, 16 of which were under development—10 by open pit and 6 by underground mining. Open pit production accounted for more than 90% of ore production. Less than 1% of Russian reserves comprised ore with an iron content of greater than 50%. Despite recent increases in iron ore production, continuously sustaining such increases without significant investment will become harder as mining conditions for iron ore in Russia become increasingly difficult owing to the increasing depths of the open pits.

Ukraine has about 30 Gt of iron ore reserves, and 26 iron ore deposits were under development with reserves adequate for 15 to 20 years at the current rate of extraction. Two-thirds of the iron ore reserves are in the Krivoy Rog Basin where practically all iron ore is mined. Although reserves are adequate for maintaining production at the current rate through 2007, a large increase in production would require significant investment to develop underground mines to access additional reserves and to process large accumulations of iron-rich tailings.

In Central Europe, iron ore output continued on a small scale even though producers were developing more electric arc steel production and replacing domestic iron ore production with imports from the CIS. Sweden remained the only significant source of iron ore in Western Europe. Central Eurasia should continue to be the region's main source of iron ore, although no major increase in production for the region had been projected. Some decline in iron ore production in Central Europe and no significant growth in production in Western Europe through 2007 may be compensated for by some production growth in Central Eurasia.

**Ferroalloying Materials.**—Europe and Central Eurasia remained a leading mine producer of such major ferroalloying materials as chromite, manganese, and nickel.

In 2002, Kazakhstan produced more than 2 Mt of chromite. Minor amounts of chromite (70,000 t) also were produced in Russia's Ural Mountains. In Central Europe, chromite was produced in Albania and Macedonia; Albania was one of the major world producers in the 1980s, and Macedonia's chromite output historically was minor. Recent Albanian production levels, however, have been well below 100,000 t. Finland remained the main producer of chromite in Western Europe.

Ukraine continued to be the leading producer of manganese ore in Europe and Central Eurasia. Production was significant in Kazakhstan. Georgia, which had been a major producer of high-grade manganese ore during the Soviet era, was in the process of restarting its manganese mining industry, which had fallen to very low levels of output.

Russia was the world's leading producer of nickel. The majority of its output was obtained from mixed sulfide ores at Noril'sk's operations in East Siberia and, to a lesser degree, on the Kola Peninsula. Nickel was also produced by enterprises that mined laterite ores in the Ural Mountains. A much smaller quantity of mined nickel came from an extension of the Urals laterite deposits in Kazakhstan. In Western Europe, relatively small quantities of nickel were mined in Greece from laterite deposits, and a much lesser amount was produced by Finland. Russia and countries of Western Europe were the major world producers of plant output of nickel, which included refined nickel, and such nickel products as chemicals, ferronickel, and oxide sinter.

Mining of nickel is expected to remain relatively stable through 2007 when some production increases are possible from Russia's Noril'sk operations if nickel prices warrant increasing production. Mine production of nickel is expected to decrease in Western Europe and startup again in Central Europe during this period.

**Lead and Zinc.**—Central Eurasia, Central Europe, and Western Europe were relatively minor mine producers of lead. Poland remained the leading mine producer of lead ore in the entire region. In Western Europe, Greece, Ireland, and Sweden were the significant lead-producing countries. In Central Eurasia, Kazakhstan and Russia were the significant lead mining countries. An overall decline in mine production of lead in Europe and Central Eurasia appeared to be set for this region, and some increase in mine output was projected for Central Eurasia through 2007. Such factors as depletion and greater reliance on secondary sources of lead have played an important role in this trend. The most significant change in mine output of lead for the region was projected to occur in Poland where production could decrease by 50% (60,000 t/yr) between 2002 and 2007. The decline in Polish output was anticipated because of depletion of reserves at the Olkusz-Pomorzany and the Trzebień lead-zinc mines, which will result in closure of these mines between 2006 and 2008. New mine development in other areas with high-quality lead-zinc ores in Poland was not proceeding owing to environmental concerns. The low quality of Russian lead-zinc ores in terms of metal content in comparison with other parts of the world will inhibit investment in their development (Novikov and others, 2003).

Europe and Central Eurasia continued to be an important producing region for primary and secondary refined lead. Western Europe was a significant world producing region for primary refined lead and produced an even larger share of the world's reported output of secondary refined lead. Data on recovery and use of secondary lead in Central Eurasia has remained incomplete. There area was not as large a producing region as Western Europe. Only Kazakhstan was a major producer of primary refined lead. Central Europe produced a smaller share of the world's output of primary and secondary lead.

Reported plans for Europe and Central Eurasia indicated a steady level of production of primary refined lead with output buoyed by anticipated production increases in the Central Eurasian and Central European areas, especially in Kazakhstan, which could compensate for decreases in output in Western Europe. In Kazakhstan, the Yuzhpolimetall firm was completing construction of a new 15,000-t/yr lead refinery on the base of the old Chimkent lead plant. Full political stabilization in the Balkans, especially in the countries that used to comprise former Yugoslavia, could well result in an outlook revision in favor of greater lead output by 2007. The Almalyk mining and metallurgical complex in Uzbekistan planned to start up lead plant in 2004 (Kozyrev and Karmanov, 2003).

Europe and Central Eurasia accounted for more than 15% of world mine output of zinc and more than one-third of the world's output of primary zinc metal. Western Europe was the region's leading producer of primary zinc metal followed by Central Eurasia and Central Europe. Practically all reported data on secondary zinc production came from Western Europe, which supplied about 10% of the world's reported secondary zinc output in 2001.

The outlook for the region's mine output of zinc appears set to increase steadily for most years through 2007. In Western Europe, some increase in mine output of zinc has been projected for Ireland owing to the startup of two new mines. In Russia, the Tarnerskoye copper-zinc deposit in the Urals is being developed with startup projected for May 2004. The project is scheduled to reach full capacity of 800,000 t/yr of copper-zinc ore by 2005 (Interfax Mining and Metals Report, 2004b).

Zinc metal production is projected to increase mainly in Central Eurasia in Kazakhstan and Russia. Kazmys Corp. is preparing to start up of an electrolytic zinc plant with a capacity of between 100,000 and 120,000 t/yr in 2003. In 2002 in Russia, the Chelyabinsk zinc plant, which had the capacity to produce 200,000 t/yr of zinc, began production (Kozyrev and Karmanov, 2003).

**Palladium and Platinum.**—The Noril'sk complex in East Siberia accounted for virtually all the output of PGM in Europe and Central Eurasia. Insubstantial amounts of platinum and palladium production also were mined by Finland, Poland, and Serbia and Montenegro. The two major producers of PGM in the world were, in order of production, South Africa and Russia. Russia was the world's largest producer of palladium owing to a higher ratio of palladium to platinum in Russian ores than in South African ores. Platinum has been used more in the manufacture of jewelry and numismatics. Both metals, however, have major applications in the industrial sector. Palladium and platinum are critical components of catalytic converters that control automobile emissions, and platinum is the critical catalytic element in the proton exchange membrane fuel cell to power automobiles now under development. PGM will be in much greater demand as the world's automobile fleets increase and are equipped with catalytic converters because of legislation being enacted to enforce stricter automobile emissions controls that will require greater loadings of PGM in catalytic converters and as the necessity arises to find alternative sources of energy to oil, which could result in the development of a hydrogen-based economy powered by fuel cells that use platinum as a catalyst.

Russia's MMC Noril'sk Nickel mined more than 90% of the country's PGM output from mixed sulfide ores at its deposits at its Polar Division in East Siberia. An estimated 10 t/yr of PGM (mostly platinum) was mined from placer deposits in the Urals, Siberia, and the Russian Far East. Noril'sk's long-term development strategy appeared to be oriented towards maximizing PGM production rather than nickel production as nickel-rich ores are being depleted. Noril'sk's remaining resources are richer in PGM relative to nickel and copper than ores that were and are being mined. Along with developing new ore sources, Noril'sk continued to develop the capability to recover PGM from the abundant pyrrhotite tailings accumulated from many years of mining. According to its 2002 annual report, Noril'sk was not planning to increase PGM production through 2007 owing to the relative prices of the metals in the mixed sulfide ores being mined by Noril'sk (cobalt, copper, gold, nickel, PGM, and so forth), although this scenario could change if the relative price of these metals made it more advantageous to produce more PGM. Noril'sk was adding capacity to mine more PGM, and the projected increase in Russian PGM production in this report to 2007 is based on Noril'sk using some of this capacity if market conditions warrant. Russian production in all circumstances should continue to account for most of, if not entirely all, the region's output of PGM.

**Silver.**—Europe and Central Eurasia region was an important source of mined silver and accounted for about 10% of world production in 2002. Production came from, in order of magnitude, Central Eurasia, Western Europe, and Central Europe. The dominant portion of silver output was as a byproduct of nonferrous metals processing. The region's main producers of silver were, in order of production, Greece, Kazakhstan, Poland, Russia, and Sweden. Russia was expected to be the principal contributor to the regional growth of silver output through 2007. The new capacity being added to the Dukat silver mine, which is located in Magadan oblast in the Russian Far East, which could increase silver production in Russia by at least 50% by 2007 (Brayko and Ivanov, 2003).

**Steel.**—In 2002 in Western Europe, steel production totaled more than 100,000 Mt. Germany continued to be the leading producer of crude steel followed by Italy, France, and Spain. Steel production in Central Europe was about 30,000 t; Poland was the leading producer of steel. Steel production in Central Eurasia totaled more than 100 Mt. Russia and Ukraine accounted for more than 90% of the steel output; Russian output was almost double that of Ukraine.

Steel trade continued to be major issue that affected the world economy. The EU and Russia have reached a number of general agreements on steel trade since 1994. Starting in 2002, the quotas for deliveries of Russian steel to the EU will be increased by 28%. In December 2001, the United States announced the beginning of investigations of a number of countries whose steel exports may have been damaging to the U.S. economy; Russia was named among these states. Agreements between the United States and Russia have limited Russian steel exports to the United States since 1999. In March 2002, the United States declared that for a 3-year period, it would impose duties that ranged from 8% to 40% on a wide variety of types of imported steel from a number of countries, which included Russia.

The level of steel production in Europe and Central Eurasia is not expected to change appreciably through 2007. In Ukraine, projections from the Ministry of Industry's Metallurgical Department called for a slight reduction in steelmaking capacity and then for production to remain level, although production actually increased slightly (Grishchenko and Granovskiy, 2003). Ukraine, which stated that its steel industry was the world's sixth ranked in production capacity, exported more than 80% of its steel output, and revenues from its steel exports accounted for 40% of the country's total export revenues (Interfax Mining and Metals Report, 2004c). With growth in steel demand anticipated in Ukraine and no increase in capacity, concern was expressed by the Deputy Minister for Industrial Policy that the country's steel industry may not be able to meet the growing domestic demand for steel (Interfax Mining and Metals Report, 2004n). Russia, Kazakhstan, and other steel-producing countries in Central Eurasia were expected to have a modest growth in steel production owing to new investment in the modernization of plants. Russian steelmaking plants will increase their investments in renovations, in particular at the Magnitogorsk, the Nizhniy Tagil, the Novolipetsk, the Severstal, and the Vyksa plants (Interfax Mining and Metals Report, 2004k). Some anticipated growth in steel production in Central Eurasia should offset some production declines in Western Europe.

**Tin.**—Mine output of tin in Europe and Central Eurasia was minor by world standards. Portugal and Spain in Western Europe and Russia and, to a lesser extent, Kyrgyzstan in Central Eurasia were the region's main mine producers of tin.

Despite the large drop in Russian tin production since the dissolution of the Soviet Union, Russia was still ranked among the world's 10 leading tin producers in 2002. Russian companies were involved in tin development in Kyrgyzstan. The Novosibirsk tin complex, which was a monopoly tin producer, controlled Russia's only major tin smelter and a large share of the country's tin mining enterprises.

Compared with the region's production of mined tin in 2002, that in 2007 was anticipated to increase mainly owing to Russia's Novosibirsk tin mining and metallurgical complex's plans to more than double mine output of tin and to increase tin metal output to more than 8,000 t/yr. Novosibirsk, which had been producing a significant percentage of its tin metal from imported raw materials, planned to almost double current levels of investment in tin mining at its Dalolovo, Deputatskolovo, Khinganolovo, and Vostokolovo tin mining enterprises (Interfax Mining and Metals Report, 2004j). Dalolovo and Vostokolovo planned to increase deliveries of tin in concentrate to 1,500 t in 2004 and 2,000 t in 2005; capacity of the beneficiation facilities at these enterprises was to be increased. Tin mine production was projected to increase because of plans to increase output at the Molodezhnoye and the Perevalnoye deposits and to bring production to commercial levels at the Pravouimiiskoye deposit for which infrastructure was under construction.

**Titanium.**—Mine production of titanium raw materials in Europe and Central Eurasia's accounted for more than one-quarter of world output in 2002. Ukraine was the major regional producer, and Norway continued to be an important source of titanium raw materials.

Ukraine, which was the only major producer of titanium raw materials in Central Eurasia, produced ilmenite and rutile and continued to supply the titanium-metals-producing plants in the CIS. Ukraine was increasing production of ilmenite and rutile concentrates at existing enterprises. Kiev-based Titanium-Apatite Company (Tako) was planning to conduct a feasibility study for the construction of a mining complex to develop an apatite-ilmenite deposit in Zhitomir oblast in Ukraine; Tako was more than 70% owned by Russia's Renova Company, which was the main shareholder in two other leading Russian companies—SUAL and Tyumen Oil Co. The complex would have the capacity to mine 6 Mt/yr of apatite-ilmenite ore from which it would produce 573,000 t/yr of ilmenite concentrate, 450,000 t/yr of apatite concentrate, and 417,000 t/yr of titanium-magnetite concentrate (Interfax Mining and Metals Report, 2004g).

In Russia, plans called for the development of the Lukoyanovskoye titanium-zirconium deposit in the Nizhniy Novgorod region. The ore sands at the deposit contain an ilmenite-chromite-hematite product, rutile, and zirconium; the sands have been assessed to have a high zirconium content. The first phase of the mine, which was scheduled to be built in 2006, will mine 480,000 t/yr of sand to produce 30,000 t/yr of concentrate. Sand mining was projected to increase to 2 Mt/yr upon completion of the mining complex (Interfax Mining and Metals Report, 2004d).

The Avisma Titanium-Magnesium complex, which was Russia's only titanium sponge producer, was one of the world's largest producers of titanium sponge and usually accounted for as much as 30% of world production. Plans called for Russia to increase its output and exports of titanium products (Interfax Mining and Metals Report, 2004i). The AO Ust'-Kamenogorsk Titanium and Magnesium complex was Kazakhstan's only titanium-sponge-producing plant. AO Ust'-Kamenogorsk exported all its titanium sponge outside the CIS. The state-owned Zaporizhya titanium and magnesium plant, which was Ukraine's only producer of titanium sponge, had an initial design capacity to produce 20,000 t/yr of titanium. The plant exports most of its output outside the CIS.

**Tungsten.**—Russia was the region's only major tungsten producer. The tungsten trioxide content of Russian reserves at its major tungsten mining enterprises, however, is, on average, more than two times lower than in deposits under development in other countries of the world. Since 1990, Russian tungsten production has fallen sharply, and tungsten reserves have decreased (Pitsyn and others, 2004). Only two tungsten mining and beneficiation complexes in Russia, the Lermontovskiy and the Primorskiy have a high enough tungsten content in their ores to be considered competitive in terms of ore quality. Russian production could be maintained by expanding capacity for mining tungsten ore at existing mining enterprises and by developing reserves at new deposits, which would include a number of small deposits with rich ore. Planned production increases at the Tyrnyauz complex in the North Caucasus could result in increased production through 2007.

### ***Industrial Minerals***

The production of most major industrial minerals in Western Europe has remained stable during recent years. As in the case of metals, the disposition of production increases more than likely would be directed towards exports rather than domestic sales.

Resources of most industrial minerals in Central Europe are adequate to meet anticipated production and consumption increases. Almost all cement manufacturing and associated quarrying activity have been acquired by major EU cement and building materials manufacturers, and many of these enterprises have been undergoing modernization to bring them in accord with EU standards.

Resources of most industrial minerals in Central Eurasia are adequate to meet anticipated production and consumption increases. The distribution of these resources within the subregion, however, is an issue for a number of countries of the FSU. For example, more than 90% of barite reserves are in Georgia and Kazakhstan, more than 90% of kaolin reserves are in Kazakhstan and Ukraine, 70% of high-grade bentonite reserves are in the countries of the Caucasus and Central Asia, and 60% of crystalline graphite reserves are in Ukraine (Aksenov and others, 2000).



**Diamond.**—Russia produced virtually all the region's production of natural gem- and industrial-grade stones. Diamond output was expected to increase given the anticipated start of production at the Lomonosov field in the Arkhangelsk region in late 2004 and new development to be undertaken in Yakutia where reserves were being depleted. Mine development in Yakutia included facility expansion to bring the Internatsionalny underground mine to full capacity, the development of underground mining below the depleted open pits at the Aikhal and the Mir pipes, the development of underground mining at the Udachnaya pipe, and the expansion of ore-processing capacity at the Nyurba Mine.

**Phosphate Rock.**—Russia was the major producer of phosphate raw materials in Europe and Central Eurasia in 2002. Phosphate production in other areas of the region was insignificant by contrast with Russian output. Russian phosphate production came almost entirely from apatite ore on the Kola Peninsula. The more than 3.2 Gt of reserves of apatite ore on the Kola Peninsula averaged about 14% P<sub>2</sub>O<sub>5</sub>. The Apatit Production Association on the Kola Peninsula was the country's major producer of phosphate raw material in the form of apatite concentrate, which averages between 35% and 39% P<sub>2</sub>O<sub>5</sub>. Apatite concentrate exports from the Kola Peninsula amounted to more than one-third of total apatite concentrate production. Decreasing ore grades and more-complicated mining and hydrological conditions have been taking place at the Kola operation owing to the increasing depth of the mines. Plans called for maintaining the apatite concentrate production in a range of from 9 to 9.5 Mt/yr, which would require attracting investment to maintain existing production capacities and to prepare new horizons for underground mining (Interfax Mining and Metals Report, 2004a).

### ***Mineral Fuels***

With the exception of North Sea hydrocarbon production, Western Europe's sources of energy should continue to be based on imports from the CIS and the Middle East. A resolution of the issue regarding pipeline routing described in this report would increase imports from the Caspian oil- and gas-producing areas of the CIS. Major increases in energy consumption in the near term, however, were not anticipated.

Western Europe, with increasingly integrated economies and energy sectors, was the world's second ranked energy consumer after the United States. Members of the EU, with the exception of the United Kingdom, were net energy importers. The EC estimated that the EU would have to import up 90% of its oil and 70% of its total energy in the next 20 to 30 years if no measures are taken. The EU has moved to increase the penetration of renewable energy in the European energy mix. In 2001, the European Parliament approved a Renewables Directive that would require the EU to double the renewable share of energy by 2010. The share of total inland energy consumption met by renewable energy resources was to increase from 6% in 2002 to 12% in 2010.

Most of the countries in Central Europe were net importers of energy. Domestic production of brown coal and lignite for electric power generation will be maintained to reduce the need for imported natural gas and petroleum, which has been largely supplied by the CIS. Poland's hard coal industry will continue to modernize and should continue to play an important regional role in the energy field.

Lignite, which was the fuel used mainly to power thermal electric power stations, continued to be an important source of energy in the Balkans and Central Europe. In 2001, Poland remained the area's largest producer of anthracite, bituminous, and lignite coals. As of December 31, 2001, Poland's resources of anthracite and bituminous coals amounted to about 45.9 Gt, and those of lignite, 13.9 Gt.

In Central Eurasia, Russia and other CIS oil and gas producers will continue to be among the major providers of hydrocarbons to the world market. The energy sector in Russia has been assessed to account for as much as 25% of the country's GDP, thus making the economy highly sensitive to changes in prices that affect energy (Interfax Petroleum Report, 2004e). The area has sufficient hydrocarbon resources to meet demand increases in domestic and export markets. The rate of increases of future deliveries of these commodities to the world market, however, will depend on the resolution of pipeline and transport issues for their delivery.

**Coal.**—Coal was produced in many CIS countries. The major producers were, in order of production, Russia, Ukraine, and Kazakhstan.

Russia's proven coal reserves were reportedly 140.2 Gt. Coal production in the past several years has been increasing as the Russian economy and domestic demand for coal have been increasing. To satisfy Russia's increased demand for energy, increased extraction of coal to 280 Mt/yr in 2005, 340 Mt/yr in 2010, and 450 Mt/yr in 2020 was considered to be necessary. During the first stage (up to 2010) of expansion, plans called for mobilizing all resources in the coal industry; this included transportation and energy resources for extracting and transporting of coal to enable the full use of existing production capacities. During the second stage (2010-20), plans called for expansion of coal production in the Kansk Achinsk and the Kuznetsk Basins, which are the two largest in coal resources in the country, as well in other basins of the Russian Far East and East Siberia. Achieving the goals of the second stage, however, will require creating a new technological base for extracting and using coal, which will involve using large-scale coal beneficiation in the area of its extraction, improving methods and means for transporting coal, and the large-scale introduction of environmentally sound technologies for converting coal into electricity. Developing these technological innovations will require significant capital investment (Artemov, 2004).

Ukraine has 34.1 Gt in proven coal reserves and accounted for more than 60% of the FSU's total coal reserves. The decrease in coal extraction began to reverse in 1997, and since then, coal production has increased. Goals were set to stabilize coal extraction at between 85 and 90 Mt/yr. Most of Ukraine's coal was mined in the Donets Basin (Donbas).

According to Kazakhstan's classification system for mineral reserves, total coal resources were assessed to be between 150 and 160 Gt; of this range, 62% is brown coal, and the remainder, bituminous coal. Kazakhstan planned to increase annual coal production to more than 90 Mt by 2005.

**Natural Gas.**—Production of natural gas in Central Eurasia (mainly the Russian Federation) amounted to almost 30% of the world total in 2002. Western Europe accounted for less than 10% of world output, and Central Europe, about 1%. Anticipated increases in production capacity in Central Eurasia made this subregion a mainstay for natural gas production increases for the entire region through 2007. Russia, which has the world's largest reserves of natural gas, remained the world's leading natural gas producer and exporter. To maintain output, Russia will have to develop new fields, most of which are located in the more-remote regions that lack infrastructure and would require a high level of investment.

In addition, Kazakhstan and Turkmenistan, which are large subregional producers of natural gas, also could be major factors in the region's expected rise in output. Much of Kazakhstan's natural gas production increases were expected to come primarily from associated gas at Kazakhstan's three largest fields—Karachaganak, Kashagan, and Tengiz (U.S. Energy Information Administration, 2003b§). The Government of Kazakhstan planned to increase natural gas production fivefold to 60 billion cubic meters per year by 2010 according to the program to develop its natural gas industry between 2004 and 2010 (Interfax Petroleum Report, 2004b).

In Uzbekistan, Uzbekneftegaz signed its first production-sharing agreement (PSA) with Britain's Trinity Energy through the specially formed subsidiary UzPEK Ltd. The PSA will allow fields in Uzbekistan's central Southwest Gissar regions and Ustyurt to be developed. Natural gas production from the PSA has been projected to be approximately 2 billion cubic meters (71 billion cubic feet) by 2006 (U.S. Energy Information Administration, 2004a§).

Azerbaijan, which has become a major regional producer of petroleum, should become a major regional natural gas producer through development of the Shah Deniz offshore natural gas and condensate field in the Caspian Sea almost 97 kilometers southeast of Baku; this field is thought to be one of the world's largest natural gas fields discovered in the past 20 years. According to British Petroleum, which is the project's operator, it contains potential recoverable resources of roughly 400 billion cubic meters (about 14 trillion cubic feet) of natural gas. Shah Deniz is being developed by the Shah Deniz consortium [BP, Statoil ASA, State Oil Company of the Azerbaijan Republic (SOCAR), LUKAgip, nv, NV NICO, TotalFinaElf, and Türkiye petroleri Anonim Brtakligi (TPAO)]. The first phase of the Shah Deniz field's development entails the installation of a new fixed offshore platform, two subsea pipelines to bring the hydrocarbons ashore, and a new onshore gas-processing terminal to be erected adjacent to the existing oil terminal at Sangachal near Baku. Consortium members expect to begin producing natural gas for export in 2006 once the new infrastructure is in place, Shah Deniz will be capable of producing approximately 296 billion cubic feet (8.4 billion cubic meters) per year, thus making Azerbaijan self-sufficient in natural gas and generating significant export revenue (U.S. Energy Information Administration, 2003a§).

**Petroleum.**—Although Central Eurasia's oil production was centered mainly in West Siberia, major new petroleum resources were developed offshore in the Caspian Sea by the littoral states in conjunction with major Western firms.

By early 2002, Russia's oil production surpassed that of Saudi Arabia's for the first time since the Soviet era and made Russia the world's leading oil producer. Russia had the world's eighth ranked oil reserves with proven oil reserves of 48.6 Gbbl (about 6.6 Gt). According to official Russian statistics, Russia's oil and gas sector accounted for 9% of the GDP. According to an analysis authored by economists for the World Bank and a director of the Economic Reform Center at Edinburgh University, however, it actually could account for about 25% of GDP (Interfax Petroleum Report, 2004e).

Russian oil companies were reassessing their reserves. Russia's reserves could be three times higher than earlier estimates, which would make Russia a prime target for oil development (Interfax Petroleum Report, 2004f). According to projections from the Russian Ministry of Natural Resources, oil production will increase at a rate faster than previously projected with production projected to reach 440 Mt/yr in 2004 and 490 Mt/yr in 2010 if domestic and international economic conditions are favorable (Interfax Petroleum Report, 2004d).

Following Russia, Kazakhstan was the second ranked oil-producing country in Central Eurasia. Kazakhstan had proven petroleum reserves estimated to be about 735 Mt. In addition, Kazakhstan's onshore and offshore petroleum resources were estimated to range from 30 to more than 50 Gbbl (about 4.1 to 6.8 Gt), which far exceeded its proven reserves. Kazakhstan could significantly increase its oil production in the coming decade with the development of the Kashagan offshore field. Plans to develop Kashagan have been postponed, although first output of 21 Mt/yr was slated for 2010. Production was projected to reach 42 Mt/yr in 2013 and maximum capacity of 56 Mt/yr in 2016 (Interfax Petroleum Report, 2004c).

Azerbaijan's economic development was based on its oil and natural gas resources in the Caspian Sea region. Following independence, Azerbaijan's potential reserves in undeveloped offshore Caspian fields attracted international investors. Multinational energy companies began major investments in the country's oil sector. Estimates of Azerbaijan's proven crude oil reserves range between 7 and 13 Gbbl, according to industry journals and Government sources. The country's largest hydrocarbon resources are located offshore in the Caspian Sea and accounted for most of the country's current petroleum production. The majority of Azerbaijan's oil output was produced by SOCAR, which was a member of all of the international consortia that were developing new oil and gas projects in Azerbaijan. The company's Soviet-era fields were in decline, but an influx of foreign investment since independence had resulted in the development of large-scale offshore projects. Azerbaijan's main production increase in the next decade was expected to come from the three-phase development of the Azeri, the Chirac, and the Gunesheli (ACG) megastructure. Production was slated to reach approximately 400,000 barrels per day by 2005 with the full implementation of Phase 1.

Implementation of Phase 2 is expected by Azerbaijan International Operating Co. to boost production to roughly 1 million barrels per day by 2008-09 (U.S. Energy Information Administration, 2003a§).

**Uranium.**—Europe and Central Eurasia was the major source of mined uranium oxide ( $U_3O_8$ ). Its share of world output was more than 25% in 2002. Uranium was mined mainly in the Central Asian countries.

Russia did not produce enough uranium to meet its consumption requirements and had to consume stockpiled material. It was planning to make up for shortfalls by participating in uranium development projects at home and abroad. Russia planned to increase the capacity of its nuclear reactors by 50% by 2010 and by more than 450% by 2050. Its proven uranium reserves were estimated to be 160,000 t, of which about 150,000 t was located at the Priargunskiy deposit, which was being mined. Russia's Ministry of Natural Resources has drafted a program Uranium of Russia to explore for new uranium deposits to help meet Russia's expected uranium requirements of 17,000 t/yr in the next decade (Interfax Mining and Metals Report, 2004h).

Kazakhstan's uranium reserves were reportedly more than 450,000 t. The country's national nuclear company Kazatomprom was sole producer, exporter, and importer of uranium. Plans called for Kazakhstan to more than quadruple uranium output to 12,000 t/yr by 2015. Kazatomprom intended to increase production by increasing output at existing mining operations and by developing new mining operations. Plans called for development of mines at the Central Moinkum, the Eastern Mynkuduk, the Inkai and the Kharasan deposits and joint-venture development of the Irkol, the Moinkum, the Tortkuduk, the Zarechnoye, and the Zhalpak deposits, as well as construction of enrichment plants at the Shestoye, the Steпноye, and the Tsentralnoye Mines. Plans also call for constructing a conversion plant to produce 3,000 t/yr of natural uranium hexafluoride for sale on world markets and for processing uranium scrap into uranium dioxide and fuel pellets (Interfax Mining and Metals Report, 2004e, f).

Total uranium reserves in Uzbekistan reportedly were about 185,000 t, of which approximately 114,000 t could be developed by the in-situ leaching (ISL) method. The country's uranium production had fallen by almost one-half since the Soviet period, and the country was instituting a program to halt the decline and to increase uranium output in the near future by investing in modernizing the Navoi mining and metallurgical complex. The decline in uranium output was attributed to problems with worn-out equipment and obtaining supplies of sulfuric acid used in the ISL method (Interfax Mining and Metals Report, 2004o).

According to forecasts, Ukraine would most likely cease uranium mining by 2010. All deposits in Ukraine are low grade. Uranium mining ceased in Kyrgyzstan in the mid-1980s. The Kara Balta mining and processing enterprise in Kyrgyzstan was still one of the FSU's largest uranium-processing plants. Uranium mining ceased in Tajikistan in the mid-1980s.

## Environmental Issues

Environmental protection continued to be a major issue. Many environmental laws and regulations had been fully established and implemented during the 1980s and 1990s in Western Europe for most industrial enterprises; these included those in the mineral sector, which were obligated to meet set standards for effluent discharges into the environment. Meeting these environmental standards was among the major criteria for accession into the EU. The environmental situation in Central Eurasia and Central Europe at the start of their transitions to market-based economic systems revealed a landscape of highly polluting heavy industries that in many cases caused serious health concerns in the area. This was not due to an absence or lack of environmental laws in the transitional economy countries, but mainly the result of very little effort expended by the former regimes in these countries to enforce existing environmental laws and in some cases to correct confusing and sometimes contradictory laws and regulations. Although some evidence pointed to an abatement of discharges of harmful pollutants from the mining and mineral-processing sector during the early 1990s in several Central Eurasian and Central European countries, this was largely the result of a sharp decline in production during that period. More recently, new applicants for EU membership from this area have been undertaking serious efforts to make major improvements with respect to environmental regulatory processes and enforcement. In 2002 in Central Europe, environmental regulations and issues played an important role in the consideration of the development of new deposits. Environmental concerns in the Czech Republic and Poland, for example, have prevented the development of gold and lead-zinc deposits.

By emphasizing industrial production while disregarding the environment, the Soviet Union left the CIS with numerous environmental problems—from severe air pollution to radioactive contamination. The economies of the CIS countries were heavily reliant on extractive industries and had been disposed to promoting economic growth rather than environmental protection in their transition to market-based economies. The environment, however, remained a salient issue. In Russia, the country's Environmental Protection Law and the Law on Ecological Expert Review, which were passed since independence, prohibit financing or implementing any project that could have a potentially harmful effect on the environment without an environmental impact assessment prepared by the project sponsor. Russian authorities, however, have occasionally been lax at enforcing compliance with environmental laws and regulations. Air pollution was a significant problem in major cities and in smaller cities where industrial facilities are located in the CIS (U.S. Energy Information Administration, 2004b§).

Single-source pollution was a major contributor to air pollution problems in the CIS because most powerplants were aging and lacked modern pollution control equipment, which resulted in large amounts of toxic emissions and waste. Continued economic growth will result in more automobiles in the CIS. Replacing older vehicles without catalytic converters with such converters in addition to other features to make these vehicles more environmentally sensitive models could help mitigate the air pollution problem (U.S. Energy Information Administration, 2004b§).

The oil and gas extraction industries in the CIS were significant sources of pollution owing to small-scale accidents, pipeline leakage, and tanker spills. The joint ventures in oil and gas extraction that have been developed with Western firms since the breakup

of the Soviet Union have been developed in accordance with Western and CIS environmental standards, but these are relatively few. The Russian Natural Resources Ministry, which was created in 2000 through the combination of the functions of the former State Committee for Environmental Protection and the State Committee on Forestry, has been taking a more-stringent approach in punishing oil companies for violating environmental terms of their field license agreements (U.S. Energy Information Administration, 2004b§).

The design of the RBMK reactors used in older nuclear powerplants in the CIS was considered to be fundamentally flawed because it did not have a containment dome. Nevertheless, despite safety concerns, plants with these reactors were in operation. Radioactive contamination damaged several regions in the CIS. Nuclear waste from civilian and military nuclear power installations has become a severe threat to the environment (U.S. Energy Information Administration, 2004b§).

Russia's energy consumption accounted for 7% of the world total. Russia ranked third behind the United States and China in total energy consumption. Per capita energy consumption in Russia was 195.3 million British thermal units (Btu) in 2001, which among large energy-consuming countries placed Russia's per capita energy consumption in 2001 higher than those of Germany (174.3 Btu) and Japan (172.2 Btu), but lower than that of the United States (341.8 million Btu) (U.S. Energy Information Administration, 2004b§).

The collapse of the Soviet Union resulted in a dramatic decrease in Russian carbon dioxide (CO<sub>2</sub>) emissions in the early- and mid-1990s because of the severe decline in industrial production in the region. Russia, however, still ranked among the highest CO<sub>2</sub>-emitting countries in the world. Russia's CO<sub>2</sub> emissions have been increasing since 1997 because of the recovery of oil extraction and other industrial production. In 2001, Russia's per capita CO<sub>2</sub> emissions were 3.05 metric tons per person, which was higher than in Germany (2.71 tons per person), Japan (2.48), China (0.65), and India (0.25), but far lower than that of the United States (5.51). Russia signed the United Nations Framework Convention on Climate Change on June 13, 1992, and then ratified it on December 28, 1994, and was a signatory to the Kyoto Protocol but has not ratified it. Under the terms of the Kyoto Protocol, Russia was not required to cut its emissions because it was classified as a country in transition. Russia must maintain its CO<sub>2</sub> and greenhouse gases emissions in the 2008-12 timetable at the same level as that of 1990. Russia had not yet ratified the Kyoto Protocol. The Russian Government has been discussing possible ratification of the Kyoto Protocol, which would allow the country to benefit from technology transfers and to bring the international agreement into effect (U.S. Energy Information Administration, 2004b§).

## **Trade**

Mineral commodity trade in transitional economy countries of Central Eurasia and Central Europe had mixed features. Of the transitional economy countries, the countries of the CIS were the major exporters of extracted and processed mineral commodities. Exports primarily went to countries outside the CIS. Trade was significant among the countries of the CIS for mineral products in which these countries were deficient, particularly for those mineral commodities that were not salable on world markets. Mineral commodity trade in Central Europe was largely distinguished by import dependence on natural gas and petroleum, raw materials for iron and steel production, and a variety of nonferrous metal ores. The CIS continued to be a significant exporter to this market of many of these commodities, especially hydrocarbons.

Steel trade in the region was of special importance. The flow of steel to world markets from Central Eurasia and Central Europe has been significant. World steel supply has been outstripping demand, and much of this surplus production was reaching the European and the U.S. markets.

During the latter half of the 1990s, an array of dumping charges were initiated against many steel-producing countries in Central Eurasia and Central Europe. Between 1995 and 2002, 74 antidumping actions were initiated against Russian ferrous metals exports; 33 resulted in sanctions. Other CIS steel-producing countries were experiencing similar problems. A quick resolution of this problem was difficult owing to the overcapacity for steel production on world markets.

The issue of iron and steel scrap was another aspect of the steel trade that was of some concern in the region. During the 1990s, the transitional economy countries of Europe and Central Eurasia became major sources of ferrous scrap feedstock for Western Europe, which increasingly had been redirecting its steelmaking operations towards the greater use of electric arc furnaces. In Central Eurasia and Central Europe, the trend toward using continuous casting technology, although nowhere near the levels attained in Western Europe, also had been growing. Consequently, decreasing supplies of ferrous scrap to Western Europe and rising exports of steel from Central Europe and Central Eurasia caused countries in Western Europe to seek a reversal of these trends.

## **Consumption**

Consumption of practically all mineral commodities in the transitional economy countries of Europe and Central Eurasia had fallen sharply during the 1990s. To some extent, this linked the future of many of the mineral industries in these countries to a revival of consumption in this region. If demand was to be revived, then many mineral commodities that were not economic to export because of large transport charges would have to be marketed domestically. Also, a revival of demand would lessen the pressure to export many mineral products, which could decrease some of the dumping charges that were being leveled at many of the transitional economy countries. A revival of domestic demand would result not only in increased domestic consumption, but also in the production from these mineral commodities of more value-added products for export. If a large portion of the population of the transitional economy countries were to consume minerals at a rate comparable to other more developed industrialized economies, then the mineral trade profile of this region would change significantly, probably to the economic advantage of some mineral producers and to the disadvantage of some consumers of mineral products in other parts of the world. As would be the case with any major

populated region of the world that was raising its mineral consumption to the level of more-advanced industrialized countries, the overall demand for the world's mineral resources would increase.

Consumption of minerals in Western Europe has not shown any significant shifts in 2001 or the several preceding years. The area's low population growth and a fully developed industrial base have accounted for the steady rate of minerals consumption.

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**Finland**—Statistics Finland

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TABLE 1  
EUROPE AND CENTRAL EURASIA: AREA AND POPULATION

Region and country	Area (square kilometers)	Population (thousands)
Western Europe:		
Austria	83,858	8,000
Belgium	30,510	10,000
Denmark	43,094	5,000
Finland	337,030	5,000
France	547,030	60,000
Germany	357,021	83,000
Greece	131,940	11,000
Iceland	103,000	300
Ireland	70,280	4,000
Italy	301,230	58,000
Luxembourg	2,586	400
Malta	316	400
Netherlands	41,526	16,000
Norway	324,220	5,000
Portugal	92,391	10,000
Spain	504,782	40,000
Sweden	449,964	9,000
Switzerland	41,290	7,000
United Kingdom	244,820	60,000
Total	3,706,888	392,100
Central Europe:		
Albania	28,748	4,000
Bosnia and Herzegovina	51,129	4,000
Bulgaria	110,910	8,000
Croatia	56,542	4,000
Czech Republic	78,866	10,000
Estonia	45,226	1,000
Hungary	93,030	10,000
Latvia	64,589	2,000
Lithuania	65,200	4,000
Macedonia	25,333	2,000
Poland	312,685	39,000
Romania	237,500	22,000
Serbia and Montenegro	102,350	11,000
Slovakia	48,845	5,000
Slovenia	20,273	2,000
Total	1,341,226	128,000
Central Eurasia:		
Armenia	29,800	3,000
Azerbaijan	86,600	8,000
Belarus	207,600	10,000
Georgia	69,700	5,000
Kazakhstan	2,717,300	17,000
Kyrgyzstan	198,500	5,000
Moldova	33,843	4,000
Russia	17,075,200	145,000
Tajikistan	143,100	7,000
Turkmenistan	488,100	5,000
Ukraine	603,700	48,000
Uzbekistan	447,400	26,000
Total	22,100,843	283,000
Regional total	27,148,957	803,100

Source: Central Intelligence Agency, The World Factbook 2002.

TABLE 2  
EUROPE AND CENTRAL EURASIA: GROSS DOMESTIC PRODUCT

Region and country	Purchasing power parity (million dollars)	Per capita (dollars)	Annual percentage change (constant prices)
Western Europe:			
Austria	239,300	29,383	1.4
Belgium	279,300	27,174	0.7
Denmark	163,800	30,512	1.0
Finland	139,900	26,291	2.3
France	1,588,800	25,945	1.1
Germany	2,223,900	26,962	0.1
Greece	194,700	17,753	3.9
Iceland	8,400	29,010	-0.5
Ireland	134,100	34,419	6.1
Italy	1,509,800	26,266	0.4
Luxembourg	26,000	58,181	1.7
Malta	7,000	18,613	1.2
Netherlands	450,400	27,964	0.6
Norway	171,800	378,857	1.4
Portugal	181,800	17,839	0.4
Spain	870,300	21,423	2.2
Sweden	240,600	26,911	2.1
Switzerland	209,200	28,594	0.2
United Kingdom	1,556,900	26,235	1.8
Total	10,196,000	878,332	28.1
Central Europe:			
Albania	13,100	3,784	4.7
Bosnia and Herzegovina	23,000	6,008	5.5
Bulgaria	56,600	7,214	4.9
Croatia	44,500	10,109	5.2
Czech Republic	155,000	15,191	1.5
Estonia	16,000	11,310	7.2
Hungary	137,500	13,874	3.5
Latvia	21,200	9,044	6.4
Lithuania	35,600	10,273	6.8
Macedonia	13,100	6,401	0.9
Poland	403,500	10,404	1.4
Romania	146,400	6,547	5.0
Serbia and Montenegro	36,000	4,321	4.0
Slovakia	68,400	12,676	4.4
Slovenia	37,700	18,916	3.4
Total	1,207,600	146,072	64.8
Central Eurasia:			
Armenia	9,300	2,454	12.9
Azerbaijan	26,100	3,174	10.6
Belarus	54,100	5,912	5.0
Georgia	11,600	2,229	5.5
Kazakhstan	88,500	5,952	9.8
Kyrgyzstan	8,300	1,643	0.0
Moldova	6,400	1,772	7.8
Russia	1,200,000	8,315	4.7
Tajikistan	6,200	944	9.1
Turkmenistan	27,300	5,684	19.8
Ukraine	238,700	4,925	5.3
Uzbekistan	41,300	1,637	3.1
Total	1,717,800	44,641	93.6
Regional total	13,121,400	1,069,045	186.5

Source: International Monetary Fund, 2002.



TABLE 3  
SELECTED EXPLORATION ACTIVITY IN EUROPE AND CENTRAL EURASIA IN 2002

Country	Site	Commodity <sup>1</sup>	Company	Phase <sup>2</sup>	Type <sup>3</sup>
Bulgaria	Ada Tepe	Au	Navan Mining plc.	Expl.	Cont.
Do.	Chala	do.	European Minerals Corp.	do.	New
Do.	Krumovgrad	do.	Navan Mining plc.	do.	Cont.
Do.	Rosino	do.	Hereward Ventures plc	do.	Do.
Finland	Arctic Platinum Partnership	Cu,Pd,Pt,Ni	Gold Fields Limited/Outokumpu	do.	Do.
Do.	Arkala/Kaskela	Au,Cu	Belvedere Resources Ltd.	do.	New
Do.	Finnish Diamond	Diamond	Poplar Resources Ltd.	do.	Do.
Do.	Keivitsa	Co,Cu,Ni,Pd,Pt	Platinova A/S	do.	Cont.
Do.	Kopsankangas	Au,Cu	Belvedere Resources Ltd.	do.	New
Do.	Kuhmo	Diamond	Conroy Diamonds and Gold plc.	do.	Do.
Do.	Lentiira	do.	European Diamonds plc	do.	Do.
Do.	Nordic	Cu,Ni,Pgm	South Atlantic Resources Ltd.	do.	Cont.
Do.	Rosendal	Ta	Tertiary Minerals Ltd.	do.	Do.
Do.	Suhanko/Konttijarvi/Ahmavaara	Au,Pgm	Gold Fields Limited/Outokumpu	do.	Do.
Do.	Susineva/Kaskela	Cu,Zn	Belvedere Resources Ltd.	do.	New
Do.	Suurikuusikko	Au	Riddarhyttan Resources AB	Devel.	Ext.
Greenland	Nalunaq	do.	Crew Development Corp.	do.	Do.
Do.	Nanortalik	do.	Do.	Expl.	Cont.
Do.	Motzfeldt	Nb,Ta	Angus & Ross plc.	do.	Do.
Ireland	Galmoy	Ag,Pb,Zn	Arcon Int'l. Resources Plc.	Prod.	Ext.
Do.	Omagh	Au	European Gold Resources Inc.	Expl.	New
Do.	Pallas Green	Pb,Zn	Minco plc.	do.	Cont.
Do.	Tullybuck-Lisglassan	Au	Conroy Diamonds and Gold plc.	do.	Do.
Italy/Sardinia	Monte Ollasteddu	do.	Barrick Gold Corp.	do.	Do.
Do.	Torpe	Ag,Au	Gold Mines of Sardinia Limited	do.	New
Macedonia	Kratovo	Au	European Minerals Corp.	do.	Cont.
Norway	Karasjok	Pge	Tertiary Minerals Ltd.	do.	Do.
Do.	Roros	Cu,Pb,Zn	Crew Development Corp.	do.	Do.
Portugal	Estacao	Zn	EuroZinc Mining Corp.	do.	Do.
Do.	Gralheira-Jales	Au	St. Elias Mines Ltd.	do.	Do.
Romania	Baita	Ag,Au	Eurogold Ltd.	do.	Do.
Do.	Bolcana	Au,Cu	European Goldfields Ltd.	do.	Do.
Do.	Bucium/Rodu/Frasin	Au	Gabriel Resources Ltd.	do.	New
Do.	Certej	Ag,Au	European Goldfields Ltd.	do.	Cont.
Do.	Certej/Bolcana	do.	Do.	do.	Do.
Do.	Certej/Craciunesti	do.	Do.	do.	Do.
Do.	Certej/Magura	do.	Do.	do.	Do.
Do.	Certej/Magura South	do.	Do.	do.	Do.
Do.	Certej/Sacaramb	do.	Do.	do.	Do.
Do.	Certej/Teascu	do.	Do.	do.	Do.
Do.	Ilba	do.	Eurogold Ltd.	do.	Do.
Do.	Racsa	do.	Do.	do.	Do.
Do.	Rodu-Frasin	do.	Gabriel Resources Ltd.	do.	Do.
Do.	Rosia Montana	Au	European Goldfields Ltd.	Devel.	Ext.
Do.	Rosia Poeni	Ag,Au	Gabriel Resources Ltd.	Expl.	New
Do.	Sacu	Au,Cu	International Goldfields Ltd.	do.	Do.
Do.	Zlatina/Baba Babuta	Ag,Au	European Goldfields Ltd.	do.	Do.
Do.	Zlatina/Hanes	do.	Do.	Prod.	Ext.
Do.	Zlatina/Muncaceasca West	Au,Cu	Do.	Expl.	New
Do.	Zlatina/Popa Stanjia	do.	Do.	do.	Do.
Do.	Zlatina/Valea Tisei	do.	Do.	do.	Do.
Spain	Aguablanca	Cu,Ni,Pgm	Rio Narcea Gold Mines Ltd.	Feas.	Cont.
Do.	Corcoesto	Au	Do.	do.	Ext.
Do.	El Valle	do.	Do.	do.	Do.
Do.	Lomero-Poyatos	Ag,Au,Cu,Pb,Zn	Cambridge Mineral Resources plc.	do.	Do.
Do.	Olivensa-Monesterio	Au	Rio Narcea Gold Mines Ltd.	Expl.	Cont.
Sweden	Bottenbacken	Ag,Au,Cu,Pd	Poplar Resources Ltd.	do.	Do.
Do.	Faboliden	Au	Lappland Goldminers AB	Devel.	Ext.
Do.	Garpenberg/Lappberget	Ag,Pb,Zn	Boliden AB	Expl.	New

See footnotes at end of table.

TABLE 3--Continued  
SELECTED EXPLORATION ACTIVITY IN EUROPE AND CENTRAL EURASIA IN 2002

Country	Site	Commodity <sup>1</sup>	Company	Phase <sup>2</sup>	Type <sup>3</sup>
Sweden	Kiruna	Diamond	Poplar Resources Ltd.	Expl.	Cont.
Do.	Kristineberg	Ag,Au,Cu,Pb,Zn	Boliden AB	Prod.	Ext.
Do.	Lautakoski	Cu	Alcaston Mining NL	Expl.	New
Do.	Logarden	Au,Cu,Pd	Tertiary Minerals Ltd.	do.	Cont.
Do.	Moskosel	Ag,Pb,Zn	Lake Resources NL	do.	New
Do.	Nimtek	Zn	Alcaston Mining NL	do.	Do.
Do.	Norrbottn	Au,Cu	BHP Billiton	do.	Cont.
Do.	Norrlden	Ag,Cu,Zn	North Atlantic Natural resources AB	Feas.	Ext.
Do.	Notrask	Pgm	Tertiary Minerals Ltd.	Expl.	Cont.
Do.	Skellefte	Ag,Au,Cu,Pb,Zn	North Atlantic Natural resources AB	do.	Do.
Do.	Storliden	Cu,Zn	South Atlantic Resources Ltd.	Prod.	Ext.
Do.	Sundsvall	Diamond	Poplar Resources Ltd.	Expl.	Cont.
Do.	Svartliden	Au	Dragon Mining NL	Devel.	Ext.
Do.	West Arctic	Cu,Ni	Equinox Resources Limited	Expl.	New
Kazakhstan	Shaimerden	Zn	ZincOx Resources plc.	Feas.	Ext.
Do.	Suzdal	Au	Celtic Resources plc.	Prod.	Do.
Do.	Uzboy	do.	Alhambra Resources Ltd.	Devel.	Do.
Kyrgyz Republic	Jerooy	do.	Conquest Resources Ltd.	Feas.	Do.
Russia	Bamsky/Vladimirsky	Ag,Au	Verena Minerals Corp.	Devel.	Do.
Do.	Berezitovoye	do.	High River Gold Mines Ltd.	Feas.	Do.
Do.	Dukat	do.	Pan American Silver Corp.	Prod.	Do.
Do.	East Pansky	Pd,Pt	Bema Gold Corp.	Expl.	New
Do.	Khakandzhinskoye	Ag,Au	MNPO Polimetall	Devel.	Ext.
Do.	Kluevsky	Au,Pgm	Eurasia Mining Plc.	Expl.	Cont.
Do.	Kupol	Ag,Au	Bema Gold Corp.	do.	New
Do.	Nezhdaninskoye	Au	Celtic Resources Holdings plc.	Prod.	Ext.
Do.	Vissim/Sosvar	Cr,Pt	Eurasia Mining plc	Expl.	Cont.
Tajikistan	Burgunda	Au	Gulf International Minerals Ltd.	Feas.	Ext.
Do.	Stepnoye	do.	Do.	Expl.	New
Uzbekistan	Amantaytau	do.	Oxus Mining Plc.	Devel.	Ext.

<sup>1</sup>Au, gold; Cu, copper; Pd, palladium; Pt, platinum; Ni, nickel; Co, cobalt; Pgm, platinum-group metals; Ta, tantalum; Zn, Zinc; Nb, niobium; Ag, silver; Pb, lead; Cr, chromium.

<sup>2</sup>Expl., exploration; Devel., developing; Prod., producing; Feas., feasible.

<sup>3</sup>Cont., continuing; Ext., extended.

TABLE 4  
EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN 2002<sup>1,2</sup>

(Thousand metric tons unless otherwise specified)

Region and/or country	Metals															
	Aluminum								Antimony, mine output		Copper					
	Alumina		Bauxite		Metal				Quantity		Chromite		Mine		Refined, primary <sup>3</sup>	
					Primary <sup>3</sup>		Secondary									
	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	(metric tons)	Percent change <sup>4</sup>	Gross weight	Percent change <sup>4</sup>	Metal content	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>
Central Eurasia:																
Armenia	--	--	--	--	--	--	--	--	--	--	--	--	20	17.6%	--	--
Azerbaijan	91	3.4%	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Belarus	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Estonia	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Georgia	--	--	--	--	--	--	--	--	--	--	--	--	8	--	--	--
Kazakhstan	1,386	12.6%	4,377	18.8%	--	--	--	--	--	--	2,369	15.8%	480	2.1%	870	-2.8%
Kyrgyzstan	--	--	--	--	--	--	--	--	150	--	--	--	--	--	--	--
Latvia	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithuania	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moldova	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Russia	3,131	2.8%	3,800	-5.0%	3,347	1.4%	130	4.0%	NA	NA	70	0.0%	700	16.7%	349	92.8%
Tajikistan	--	--	--	--	308	6.6%	--	--	3,000	20.0%	--	--	--	--	--	--
Turkmenistan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ukraine	1,351	0.6%	--	--	112	5.7%	130	--	--	--	--	--	--	--	--	--
Uzbekistan	--	--	--	--	--	--	3	--	--	--	--	--	70	7.7%	75	--
Total	5,959	4.4%	8,200	6.4%	3,767	1.9%	260	1.9%	3,200	-55.9%	2,440	15.3%	1,300	10.2%	1,290	12.4%
Share of world total	11.0%	1.1%	5.8%	3.6%	14.4%	-4.0%	5.1%	-0.8%	2.8%	-39.2%	18.0%	4.0%	9.4%	10.3%	10.0%	12.8%
Central Europe:																
Albania	--	--	5	--	--	--	--	--	--	--	215	7.5%	1	--	--	--
Bosnia and Herzegovina	--	--	113	46.8%	103	7.3%	5	25.0%	--	--	--	--	--	--	--	--
Bulgaria	--	--	--	--	--	--	2	--	--	--	--	--	85	-3.4%	40	17.6%
Croatia	--	--	--	--	--	-100.0%	--	--	--	--	--	--	--	--	--	--
Czech Republic	--	--	--	--	--	--	20	--	--	--	--	--	--	--	--	--
Hungary	220	-26.7%	720	-28.0%	35	2.9%	75	-1.3%	--	--	--	--	--	--	10	-16.7%
Macedonia	--	--	--	--	--	--	3	--	--	--	--	--	10	11.1%	--	--
Poland	--	--	--	--	49	8.9%	4	33.3%	--	--	--	--	500	5.5%	509	2.2%
Romania	350	9.7%	--	--	187	2.7%	(5)	-100.0%	--	--	--	--	20	5.3%	11	-42.1%
Serbia and Montenegro	185	--	612	0.3%	112	12.0%	--	--	--	--	--	--	50	61.3%	24	50.0%
Slovakia	16	-85.5%	--	--	147	9.7%	--	--	--	--	--	--	--	--	2	--
Slovenia	--	--	--	--	88	14.3%	--	--	--	--	--	--	--	--	--	--
Total	770	-15.6%	1,450	-14.3%	721	4.8%	110	--	--	--	215	7.5%	670	7.2%	600	2.6%
Share of world total	1.4%	-18.3%	1.0%	-16.6%	2.8%	-1.3%	2.1%	-2.7%	--	--	1.6%	-3.0%	4.9%	7.4%	4.6%	3.0%
Western Europe:																
European Free Trade Association:																
Iceland	--	--	--	--	264	7.8%	--	--	--	--	--	--	--	--	--	--
Norway	--	--	--	--	1,096	2.6%	270	1.9%	--	--	--	--	1	--	32	18.5%
Switzerland	--	--	--	--	36	--	6	--	--	--	--	--	--	--	--	--
Total	--	--	--	--	1,396	3.5%	280	1.8%	--	--	--	--	1	--	32	18.5%

See footnotes at end of table.

TABLE 4--Continued  
EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN 2002<sup>1,2</sup>

(Thousand metric tons unless otherwise specified)

Region and/or country	Metals															
	Aluminum															
					Metal				Antimony, mine output				Copper			
	Alumina		Bauxite		Primary <sup>3</sup>		Secondary		Quantity		Chromite		Mine		Refined, primary <sup>3</sup>	
	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	(metric tons)	Percent change <sup>4</sup>	Gross weight	Percent change <sup>4</sup>	Metal content	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>
Western Europe--Continued:																
European Union (EU):																
Austria	--	--	--	--	--	--	150	--	--	--	--	--	--	--	6	200.0%
Belgium	--	--	--	--	--	--	1	--	--	--	--	--	--	--	425	--
Denmark-Greenland	--	--	--	--	--	--	18	--	--	--	--	--	--	--	--	--
Finland	--	--	--	--	--	--	30	-11.8%	--	--	566	-1.6%	14	--	127	5.8%
France	600	--	160	4.6%	464	0.4%	262	3.6%	500	--	--	--	--	--	1	-50.0%
Germany	1	--	--	--	653	0.2%	666	7.4%	--	--	--	--	--	--	331	-6.2%
Greece	700	-1.3%	2,052	6.3%	164	-2.4%	2	-33.3%	--	--	--	--	--	--	--	--
Ireland	1,200	-14.3%	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Italy	925	-2.6%	(3)	--	190	1.6%	590	2.6%	--	--	--	--	--	--	32	-11.1%
Luxembourg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Malta	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Netherlands	--	--	--	--	284	-3.4%	120	--	--	--	--	--	--	--	--	--
Portugal	--	--	--	--	--	--	16	-11.1%	--	--	--	--	77	-7.2%	--	--
Spain	1,000	-9.1%	--	--	380	1.1%	243	9.5%	--	--	--	--	--	-100.0%	262	11.5%
Sweden	--	--	--	--	101	-1.0%	28	12.0%	--	--	--	--	72	-2.7%	199	11.2%
United Kingdom	74	-11.9%	--	--	344	0.9%	205	-17.7%	--	--	--	--	--	--	--	--
Total	4,500	-7.1%	2,210	6.1%	2,580	-0.1%	2,330	1.9%	500	--	566	-1.6%	163	-9.9%	1,383	-1.0%
Total Western Europe	4,500	-7.1%	2,210	6.1%	3,980	1.1%	2,610	1.9%	500	--	566	-1.6%	164	-9.9%	1,420	-0.6%
Share of world total	8.3%	-10.1%	1.6%	3.4%	15.2%	-4.7%	50.8%	-0.8%	0.4%	38.1%	4.2%	-11.2%	1.2%	-9.8%	10.9%	-0.3%
Total Europe and Central Eurasia	11,200	-2.1%	11,800	3.3%	8,460	1.8%	2,980	1.8%	3,650	-52.3%	3,220	11.4%	2,110	7.4%	3,310	4.7%
Share of world total	20.8%	-5.2%	8.4%	0.6%	32.4%	-4.1%	58.1%	-0.9%	3.2%	-34.1%	23.8%	0.5%	15.5%	7.5%	25.6%	5.1%
United States <sup>6</sup>	4,340	(7)	NA	NA	2,710	2.7%	--	--	--	--	--	--	1,140	-14.8%	1,440	-11.4%
Share of world total	8.0%	-3.2%	NA	NA	10.3%	-3.3%	--	--	--	--	--	--	8.4%	-14.7%	11.2%	-11.1%
World total <sup>6</sup>	54,000	3.3%	141,000	2.7%	26,200	6.1%	5,130	2.7%	114,000	-27.6%	13,500	10.9%	13,600	-0.1%	12,900	-0.4%

See footnotes at end of table.

TABLE 4--Continued  
EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN 2002<sup>1,2</sup>

(Thousand metric tons unless otherwise specified)

Region and/or country	Metals--Continued															
	Copper, refined, secondary		Gold, mine output		Iron and steel						Lead					
					Iron ore, mine output		Pig iron and direct-reduced iron		Steel, crude		Mine		Refined			
													Primary <sup>3</sup>		Secondary	
	Quantity	Percent change <sup>4</sup>	Quantity (kilograms)	Percent change <sup>4</sup>	Metal content	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Metal content	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>
Central Eurasia:																
Armenia	--	--	3,200	68.4%	--	--	--	--	--	--	--	--	--	--	--	--
Azerbaijan	--	--	--	--	(5)	-100.0%	--	--	1	-50.0%	--	--	--	--	--	--
Belarus	--	--	--	--	--	--	--	--	1,607	-0.2%	--	--	--	--	--	--
Estonia	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Georgia	--	--	2,000	--	--	--	--	--	5	--	(5)	--	--	--	--	--
Kazakhstan	--	--	22,402	-10.4%	8,700	8.8%	4,089	4.7%	4,868	3.8%	46	21.1%	184	4.0%	--	--
Kyrgyzstan	--	--	18,000	-25.0%	--	--	--	--	--	--	--	--	--	--	--	--
Latvia	--	--	--	--	--	--	--	--	W	NA	--	--	--	--	--	--
Lithuania	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moldova	--	--	--	--	--	--	--	--	900	-6.8%	--	--	--	--	--	--
Russia	104	-57.6%	158,000	3.6%	49,000	2.1%	48,060	2.5%	59,777	1.3%	14	16.7%	60	-11.8%	--	--
Tajikistan	--	--	5,000	--	--	--	--	--	--	--	1	--	--	--	--	--
Turkmenistan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ukraine	--	--	--	--	32,300	7.7%	27,560	4.4%	34,538	4.3%	--	--	--	--	15	25.0%
Uzbekistan	5	--	80,000	--	--	--	--	--	450	-2.2%	--	--	--	--	--	--
Total	109	-56.4%	289,000	-0.6%	90,000	4.6%	79,700	3.3%	102,000	2.3%	61	19.6%	244	-0.4%	15	25.0%
Share of world total	4.3%	-50.7%	11.2%	-0.1%	14.9%	1.7%	12.3%	-31.8%	11.3%	-3.9%	2.1%	29.3%	6.8%	-1.4%	0.5%	24.3%
Central Europe:																
Albania	--	--	--	--	--	--	--	--	97	3.2%	--	--	--	--	--	--
Bosnia and Herzegovina	--	--	--	--	70	-40.2%	60	--	70	-16.7%	(5)	66.7%	(5)	66.7%	--	--
Bulgaria	--	--	2,612	2.8%	105	14.1%	1,072	-11.5%	1,860	-4.2%	24	50.0%	66	-25.0%	--	--
Croatia	--	--	--	--	--	--	--	--	34	-41.4%	--	--	--	--	--	--
Czech Republic	18	--	2,000	--	--	-100.0%	4,840	3.5%	6,512	3.1%	--	--	--	--	29	-3.3%
Hungary	--	--	--	--	--	--	1,334	8.9%	2,141	4.1%	--	--	--	--	--	--
Macedonia	--	--	500	--	1	--	--	--	260	--	15	-25.0%	20	--	--	--
Poland	--	--	296	-15.2%	--	--	5,296	-2.6%	8,367	-5.0%	120	-1.6%	68	--	45	12.5%
Romania	2	-50.0%	3,000	-14.3%	77	1.3%	3,976	22.6%	5,491	11.2%	18	-10.0%	26	--	3	--
Serbia and Montenegro	12	-25.0%	3,600	350.0%	--	--	485	5.2%	596	-0.3%	12	-36.8%	--	--	--	--
Slovakia	--	--	77	-51.0%	175	-26.5%	3,533	8.5%	4,275	7.2%	--	--	--	--	--	--
Slovenia	--	--	--	--	--	--	--	--	481	4.1%	--	--	--	--	15	--
Total	32	-15.8%	12,100	22.7%	428	-19.2%	20,600	5.2%	30,200	2.9%	190	-4.1%	180	-10.9%	92	4.5%
Share of world total	1.3%	-4.8%	0.5%	23.3%	0.1%	-21.5%	3.2%	-4.0%	3.3%	-3.4%	6.4%	3.7%	5.0%	-11.8%	3.0%	3.9%
Western Europe:																
European Free Trade Association:																
Iceland	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Norway	--	--	--	--	350	2.9%	60	--	694	9.3%	--	--	--	--	--	--
Switzerland	--	--	--	--	--	--	100	--	1,100	--	--	--	--	--	10	--
Total	--	--	--	--	350	2.9%	160	--	1,800	3.4%	--	--	--	--	10	--

See footnotes at end of table.

TABLE 4--Continued  
EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN 2002<sup>1,2</sup>

(Thousand metric tons unless otherwise specified)

Region and/or country	Metals--Continued															
	Copper, refined, secondary		Gold, mine output		Iron and steel						Lead					
					Iron ore, mine output		Pig iron and direct-reduced iron		Steel, crude		Mine		Refined			
													Primary <sup>3</sup>		Secondary	
	Quantity	Percent change <sup>4</sup>	Quantity (kilograms)	Percent change <sup>4</sup>	Metal content	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Metal content	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>
Western Europe--Continued:																
European Union (EU):																
Austria	64	-5.9%	50	--	581	-0.9%	4,669	6.7%	6,208	5.5%	--	--	--	--	20	-9.1%
Belgium	--	--	--	--	--	--	7,800	0.9%	11,000	2.2%	--	--	75	-6.3%	20	25.0%
Denmark-Greenland	--	--	--	--	--	--	--	--	392	-47.5%	--	--	--	--	--	--
Finland	--	--	4,666	-16.0%	--	--	3,000	3.4%	4,004	1.7%	--	--	--	--	--	--
France	--	--	2,600	3.6%	--	--	13,217	10.1%	20,524	5.6%	--	--	84	-14.3%	112	-21.7%
Germany	265	-22.3%	--	--	--	--	29,427	0.8%	45,015	0.5%	--	--	142	-7.8%	239	8.6%
Greece	--	--	--	--	20	-4.8%	--	--	1,835	43.2%	29	--	5	--	5	--
Ireland	--	--	--	--	--	--	--	--	--	-100.0%	33	-26.7%	--	--	12	20.0%
Italy	--	--	600	13.2%	--	--	9,736	-8.6%	25,930	1.8%	1	--	45	-45.1%	150	24.0%
Luxembourg	--	--	--	--	--	--	--	--	2,700	-0.9%	--	--	--	--	--	--
Malta	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Netherlands	--	--	--	--	--	--	5,000	-5.7%	6,000	-0.6%	--	--	--	--	22	-8.3%
Portugal	--	--	--	--	10	-9.1%	100	22.0%	800	9.9%	--	--	--	--	4	--
Spain	60	7.1%	3,600	-3.2%	--	--	3,978	-2.8%	16,358	3.3%	5	-86.1%	--	--	100	-18.0%
Sweden	25	--	4,800	-3.7%	13,000	1.5%	3,700	2.4%	5,754	4.3%	38	-55.8%	30	-3.2%	40	-9.1%
United Kingdom	--	--	--	--	(5)	--	8,579	-13.0%	11,718	-13.9%	1	--	208	2.5%	167	2.5%
Total	410	-15.5%	16,300	-5.9%	13,600	1.4%	89,200	-0.7%	158,000	0.9%	107	-46.0%	589	-9.8%	890	-0.4%
Total Western Europe	410	-15.5%	16,300	-5.9%	14,000	1.4%	89,400	-0.7%	160,000	0.9%	107	-46.0%	589	-9.8%	900	-0.4%
Share of world total	16.4%	-4.5%	0.6%	-5.5%	2.3%	-1.5%	14.7%	-3.6%	17.7%	-5.2%	3.6%	-41.6%	16.3%	-10.7%	29.3%	-1.0%
Total Europe and Central Eurasia	555	-28.7%	317,000	-0.2%	104,000	4.1%	190,000	1.6%	292,000	1.6%	357	-20.0%	1,010	-7.9%	1,010	0.3%
Share of world total	22.0%	-19.3%	12.3%	0.3%	17.3%	1.1%	36.0%	-1.7%	32.4%	-4.6%	12.1%	-13.5%	28.0%	-8.8%	32.8%	(7)
United States <sup>6</sup>	70	-59.3%	298,000	-11.0%	32,500	10.9%	40,700	-10.1%	91,600	1.6%	451	-3.2%	262	-9.7%	1,120	1.4%
Share of world total	2.8%	-54.0%	11.6%	-10.6%	5.4%	7.8%	7.8%	-2.1%	10.1%	-4.5%	15.3%	4.6%	7.3%	-10.6%	36.3%	0.8%
World total <sup>6</sup>	2,530	-11.6%	2,580,000	-0.5%	604,000	2.9%	647,000	3.4%	903,000	6.5%	2,940	-7.5%	3,610	1.0%	3,070	0.6%

See footnotes at end of table.

TABLE 4--Continued  
EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN 2002<sup>1,2</sup>

(Thousand metric tons unless otherwise specified)

Region and/or country	Metals--Continued															
	Manganese ore, mine output		Mercury, mine output, metal content		Nickel				Platinum-group metals, refined, primary and secondary				Silver, mine output, metal content		Tin, mine output, metal content	
					Mine		Refined		Palladium		Platinum					
	Metal content	Percent change <sup>4</sup>	(metric tons)	Percent change <sup>4</sup>	Metal content	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity (kilograms)	Percent change <sup>4</sup>	Quantity (kilograms)	Percent change <sup>4</sup>	(metric tons)	Percent change <sup>4</sup>	(metric tons)	Percent change <sup>4</sup>
Central Eurasia:																
Armenia	--	--	--	--	--	--	--	--	--	--	--	--	6	100.0%	--	--
Azerbaijan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Belarus	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Estonia	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Georgia	24	14.3%	--	--	--	--	--	--	--	--	--	--	33	--	--	--
Kazakhstan	452	29.1%	--	--	--	--	--	--	--	--	--	--	892	-9.2%	--	--
Kyrgyzstan	--	--	250	-16.7%	--	--	--	--	--	--	--	--	--	--	300	--
Latvia	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithuania	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moldova	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Russia	23	--	50	--	310	-4.6%	231	-5.3%	69,000	-4.2%	34,000	-2.9%	400	5.3%	2,900	-35.6%
Tajikistan	--	--	20	-50.0%	--	--	--	--	--	--	--	--	50	900.0%	--	--
Turkmenistan	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ukraine	940	1.1%	--	--	--	-100.0%	--	--	--	--	--	--	--	--	--	--
Uzbekistan	--	--	--	--	--	--	--	--	--	--	--	--	80	--	--	--
Total	1,440	8.7%	320	-17.9%	310	-5.2%	231	-5.3%	69,000	-4.2%	34,000	-2.9%	1,460	-1.5%	3,200	-33.3%
Share of world total	17.2%	3.5%	26.7%	-31.7%	23.9%	-5.9%	27.5%	-5.0%	41.9%	-6.6%	14.1%	-5.1%	7.0%	-3.3%	1.2%	-26.9%
Central Europe:																
Albania	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bosnia and Herzegovina	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bulgaria	(5)	66.7%	--	--	--	--	--	--	--	--	--	--	60	5.3%	--	--
Croatia	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Czech Republic	--	--	--	--	--	--	--	--	--	--	--	--	25	--	--	--
Hungary	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Macedonia	--	--	--	--	--	--	--	--	--	--	--	--	12	-20.0%	--	--
Poland	--	--	--	--	--	--	--	--	12	--	20	--	1,222	2.7%	--	--
Romania	12	-14.3%	--	--	--	--	--	--	--	--	--	--	18	50.0%	--	--
Serbia and Montenegro	--	--	--	--	--	--	--	--	10	--	1	--	7	16.7%	--	--
Slovakia	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Slovenia	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	23	-8.0%	--	--	--	--	--	--	22	--	21	--	1,344	3.0%	--	--
Share of world total	0.3%	-12.4%	--	--	--	--	--	--	(7)	--	(7)	--	6.5%	1.1%	--	--
Western Europe:																
European Free Trade Association:																
Iceland	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Norway	--	--	--	--	2	--	69	1.5%	--	--	1,000	--	--	--	--	--
Switzerland	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	--	--	--	--	2	--	69	1.5%	--	--	1,000	--	--	--	--	--

See footnotes at end of table.

TABLE 4--Continued  
EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN 2002<sup>1,2</sup>

(Thousand metric tons unless otherwise specified)

Region and/or country	Metals--Continued															
	Manganese ore, mine output		Mercury, mine output, metal content		Nickel				Platinum-group metals, refined, primary and secondary				Silver, mine output, metal content		Tin, mine output, metal content	
					Mine		Refined		Palladium		Platinum					
	Metal content	Percent change <sup>4</sup>	(metric tons)	Percent change <sup>4</sup>	Metal content	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity (kilograms)	Percent change <sup>4</sup>	Quantity (kilograms)	Percent change <sup>4</sup>	(metric tons)	Percent change <sup>4</sup>	(metric tons)	Percent change <sup>4</sup>
Western Europe--Continued:																
European Union (EU):																
Austria	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Belgium	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Denmark-Greenland	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Finland	--	--	51	-28.2%	3	50.0%	49	-3.9%	--	--	508	-0.4%	29	20.8%	--	--
France	--	--	--	--	--	--	11	--	--	--	--	--	1	--	--	--
Germany	--	--	--	--	--	--	--	--	--	--	50,000	--	--	--	--	--
Greece	(5)	--	--	--	17	--	--	--	--	--	--	--	75	21.6%	--	--
Ireland	--	--	--	--	--	--	--	--	--	--	--	--	5	-73.7%	--	--
Italy	1	--	--	--	--	--	--	--	--	--	--	--	4	--	--	--
Luxembourg	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Malta	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Netherlands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Portugal	--	--	--	--	--	--	--	--	--	--	--	--	23	--	361	-69.3%
Spain	--	--	--	--	--	--	--	--	--	--	--	--	50	-16.7%	500	-29.4%
Sweden	--	--	--	--	--	--	--	--	--	--	--	--	299	-2.3%	--	--
United Kingdom	--	--	--	--	--	--	34	--	--	--	--	--	--	--	--	--
Total	1	--	51	-28.2%	20	5.3%	94	-2.1%	--	--	50,500	(7)	486	-2.5%	861	-54.3%
Total Western Europe	1	--	51	-28.2%	22	--	163	-0.6%	--	--	51,500	(7)	486	-2.5%	861	-54.3%
Share of world total	(7)	--	4.3%	-40.2%	1.7%	-0.8%	19.4%	-0.3%	--	--	21.4%	-2.3%	2.3%	-4.4%	0.3%	-49.9%
Total Europe and Central Eurasia	1,460	8.4%	371	-19.5%	337	-3.4%	394	-3.4%	69,000	-4.2%	85,500	-1.2%	3,290	0.1%	4,060	-39.2%
Share of world total	17.4%	3.2%	31.0%	-33.0%	26.0%	-4.2%	47.0%	-3.1%	41.9%	-6.6%	35.6%	-3.5%	15.9%	-1.7%	1.6%	-33.4%
United States <sup>6</sup>	--	--	NA	NA	--	--	--	--	14,800	22.6%	4,390	21.7%	1,450	-16.7%	--	--
Share of world total	--	--	NA	NA	--	--	--	--	9.0%	19.5%	1.8%	18.8%	7.0%	-18.2%	--	--
World total <sup>6</sup>	8,390	5.0%	1,200	20.2%	1,300	0.8%	839	-0.4%	165,000	2.6%	240,000	2.4%	20,700	1.9%	260,000	-8.8%

See footnotes at end of table.



TABLE 4--Continued  
EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED COMMODITIES IN 2002<sup>1,2</sup>

(Thousand metric tons unless otherwise specified)

Region and/or country	Metals--Continued													
	Tin, metal, primary <sup>3</sup>		Titanium, metric tons				Tungsten, mine output, metal content		Zinc, metric tons				Industrial minerals	
			Ilmenite		Metal, sponge				Mine, metal content		Metal, primary and secondary		Ammonia, N content	
	Quantity (metric tons)	Percent change <sup>4</sup>	TiO <sub>2</sub> content	Percent change <sup>4</sup>	Metal content	Percent change <sup>4</sup>	Quantity (metric tons)	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>
Central Eurasia:														
Armenia	--	--	--	--	--	--	--	--	782	5.0%	--	--	--	--
Azerbaijan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Belarus	--	--	--	--	--	--	--	--	--	--	--	--	760	4.8%
Estonia	--	--	--	--	--	--	--	--	--	--	--	--	39	-74.2%
Georgia	--	--	--	--	--	--	--	--	200	--	--	--	90	50.0%
Kazakhstan	--	--	--	--	14,000	--	--	--	392,400	14.0%	286,300	3.3%	--	--
Kyrgyzstan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Latvia	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithuania	--	--	--	--	--	--	--	--	--	--	--	--	468	4.7%
Moldova	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Russia	3,650	1.4%	--	--	23,000	--	3,400	-2.9%	130,000	4.8%	244,000	3.0%	8,600	-1.0%
Tajikistan	--	--	--	--	--	--	--	--	--	--	--	--	15	200.0%
Turkmenistan	--	--	--	--	--	--	--	--	--	--	--	--	75	--
Ukraine	--	--	281,000	2.9%	6,200	-89.8%	--	--	--	--	--	--	3,700	--
Uzbekistan	--	--	--	--	--	--	--	--	--	--	20,000	--	740	10.4%
Total	3,650	1.4%	281,000	2.9%	43,200	-55.9%	3,400	-2.9%	523,000	11.5%	550,000	3.0%	14,500	-0.2%
Share of world total	1.3%	4.7%	6.8%	2.5%	92.2%	-5.5%	6.0%	-17.5%	6.2%	16.1%	5.7%	-0.9%	13.3%	93.8%
Central Europe:														
Albania	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bosnia and Herzegovina	--	--	--	--	--	--	--	--	300	--	--	--	1	--
Bulgaria	10	--	--	--	--	--	--	--	25,800	143.4%	83,000	-6.3%	600	3.4%
Croatia	--	--	--	--	--	--	--	--	--	--	--	--	270	2.7%
Czech Republic	--	--	--	--	--	--	--	--	--	--	250	--	250	--
Hungary	--	--	--	--	--	--	--	--	--	--	--	--	250	--
Macedonia	--	--	--	--	--	--	--	--	10,000	-50.0%	38,000	-26.9%	--	--
Poland	--	--	--	--	--	--	--	--	170,000	-1.3%	158,900	-9.0%	1,362	16.5%
Romania	--	--	--	--	--	--	--	--	21,250	-28.7%	48,000	1.7%	1,000	--
Serbia and Montenegro	--	--	--	--	--	--	--	--	9,300	-38.0%	11,500	-11.5%	65	-1.5%
Slovakia	--	--	--	--	--	--	--	--	--	--	--	--	326	56.0%
Slovenia	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	10	--	--	--	--	--	--	--	237,000	-4.6%	340,000	-9.6%	4,120	8.9%
Share of world total	(7)	--	--	--	--	--	--	--	2.8%	-0.7%	3.5%	-13.0%	3.8%	111.5%
Western Europe:														
European Free Trade Association:														
Iceland	--	--	--	--	--	--	--	--	--	--	--	--	--	-100.0%
Norway	--	--	340,000	--	--	--	--	--	--	--	137,300	6.2%	330	2.2%
Switzerland	--	--	--	--	--	--	--	--	--	--	--	--	33	6.5%
Total	--	--	340,000	--	--	--	--	--	--	--	137,300	6.2%	363	1.7%

See footnotes at end of table.

TABLE 4--Continued  
EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED COMMODITIES IN 2002<sup>1,2</sup>

(Thousand metric tons unless otherwise specified)

Region and/or country	Metals--Continued													
	Tin, metal, primary <sup>3</sup>		Titanium, metric tons				Tungsten, mine output, metal content		Zinc, metric tons				Industrial minerals	
			Ilmenite		Metal, sponge				Mine, metal content		Metal, primary and secondary		Ammonia, N content	
	Quantity (metric tons)	Percent change <sup>4</sup>	TiO <sub>2</sub> content	Percent change <sup>4</sup>	Metal content	Percent change <sup>4</sup>	Quantity (metric tons)	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>
Western Europe--Continued:														
European Union (EU):														
Austria	--	--	--	--	--	--	1,400	13.2%	--	--	--	--	(5)	--
Belgium	--	--	--	--	--	--	--	--	--	--	260,000	2.0%	860	--
Denmark-Greenland	--	--	--	--	--	--	--	--	--	--	--	--	2	--
Finland	--	--	--	--	--	--	--	--	61,580	69.9%	235,337	-4.8%	87	--
France	--	--	--	--	--	--	500	--	--	--	338,924	-1.4%	1,050	-33.5%
Germany	100	--	--	--	--	--	--	--	--	--	378,600	5.7%	2,623	4.0%
Greece	--	--	--	--	--	--	--	--	30,000	46.6%	--	--	58	1.8%
Ireland	--	--	--	--	--	--	--	--	252,700	12.2%	--	--	400	-9.7%
Italy	--	--	--	--	--	--	--	--	--	--	176,000	-1.0%	391	-9.9%
Luxembourg	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Malta	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Netherlands	--	--	--	--	--	--	--	--	--	--	203,400	-0.7%	1,970	1.6%
Portugal	--	--	--	--	--	--	693	-0.7%	--	--	3,000	-16.7%	190	-5.9%
Spain	--	--	--	--	--	--	--	--	69,900	-57.6%	488,000	16.7%	415	-4.8%
Sweden	--	--	--	--	--	--	--	--	142,900	-8.6%	--	--	--	--
United Kingdom	--	--	--	--	--	--	--	--	--	--	99,600	-0.4%	837	-1.5%
Total	100	--	--	--	--	--	2,590	6.5%	557,000	-7.6%	2,180,000	3.5%	8,880	-5.6%
Total Western Europe	100	--	340,000	--	--	--	2,590	6.5%	557,000	-7.6%	2,320,000	3.7%	9,250	-5.3%
Share of world total	(7)	--	8.3%	-0.4%	--	--	4.6%	-9.6%	6.6%	-3.9%	24.1%	-0.3%	8.5%	84.0%
Total Europe and Central Eurasia	3,760	--	621,000	1.3%	43,200	-55.9%	5,990	1.0%	1,320,000	-0.2%	3,210,000	2.0%	27,900	-0.8%
Share of world total	(7)	--	15.1%	0.9%	92.2%	-5.5%	10.6%	-14.2%	15.7%	3.8%	33.3%	-1.9%	25.6%	92.8%
United States <sup>6</sup>	--	--	164,000	--	--	--	--	--	780,000	-7.4%	294,000	-5.2%	10,800	15.8%
Share of world total	--	--	4.0%	-0.4%	--	--	--	--	9.3%	-3.6%	3.1%	-8.8%	10.0%	125.0%
World total <sup>6</sup>	275,000	-3.2%	4,120,000	0.4%	46,900	-53.4%	56,800	17.7%	8,400,000	-3.9%	9,640,000	4.0%	109,000	-48.5%

See footnotes at end of table.

TABLE 4--Continued  
EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN 2002<sup>1,2</sup>

(Thousand metric tons unless otherwise specified)

Region and/or country	Industrial minerals--Continued										Mineral fuels					
	Cement, hydraulic		Diamond, natural, gemstones and industrial		Phosphate rock, P <sub>2</sub> O <sub>5</sub> content		Potash, K <sub>2</sub> O equivalent		Salt		Coal					
											Anthracite		Bituminous		Lignite	
	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>
Central Eurasia:																
Armenia	355	29.1%	--	--	--	--	--	--	30	3.4%	--	--	--	--	--	--
Azerbaijan	848	62.1%	--	--	--	--	--	--	5	25.0%	--	--	--	--	--	--
Belarus	2,171	20.4%	--	--	--	--	3,800	2.7%	304	1.0%	--	--	--	--	--	--
Estonia	466	15.1%	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Georgia	300	--	--	--	--	--	--	--	--	--	--	--	60	50.0%	--	--
Kazakhstan	2,129	4.9%	--	--	38	35.7%	--	--	--	--	--	--	68,226	-10.6%	2,374	-10.6%
Kyrgyzstan	533	13.6%	--	--	--	--	--	--	--	--	--	--	121	4.3%	377	4.4%
Latvia	W	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithuania	605	14.4%	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Moldova	300	50.0%	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Russia	37,700	6.8%	23,000	-0.9%	4,400	4.8%	4,400	2.3%	2,800	--	14,700	-7.5%	164,520	5.7%	74,200	-25.9%
Tajikistan	100	42.9%	--	--	--	--	--	--	--	--	--	--	40	100.0%	--	--
Turkmenistan	450	--	--	--	--	--	--	--	215	--	--	--	--	--	--	--
Ukraine	7,142	23.1%	--	--	--	--	60	-20.0%	2,300	--	15,000	-15.3%	66,400	5.4%	1,000	--
Uzbekistan	4,000	--	--	--	33	--	--	--	--	--	--	--	71	-2.7%	2,664	-2.3%
Total	57,100	9.5%	23,000	-0.9%	4,470	4.9%	8,260	2.3%	5,650	0.1%	29,700	-11.6%	299,000	1.4%	80,600	-24.5%
Share of world total	3.2%	5.4%	35.4%	-9.3%	10.4%	-2.7%	31.1%	1.9%	2.8%	5.7%	10.7%	-13.6%	8.1%	-5.2%	9.1%	-21.8%
Central Europe and Balkans:																
Albania	--	--	--	--	--	--	--	--	--	--	--	--	--	--	20	25.0%
Bosnia and Herzegovina	300	--	--	--	--	--	--	--	50	--	--	--	--	--	2,000	5.3%
Bulgaria	2,100	0.6%	--	--	--	--	--	--	1,800	-6.8%	13	-7.1%	109	7.9%	26,434	-2.1%
Croatia	3,378	4.1%	--	--	--	--	--	--	37	12.1%	--	--	--	--	--	--
Czech Republic	3,217	-9.4%	--	--	--	--	--	--	--	--	--	--	14,097	-4.8%	49,335	-4.5%
Hungary	3,510	1.7%	--	--	--	--	--	--	--	--	--	--	726	26.7%	11,605	-13.6%
Macedonia	450	--	--	--	--	--	--	--	--	--	--	--	--	--	6,000	--
Poland	10,948	-9.3%	--	--	--	--	--	--	3,520	1.9%	--	--	103,546	-0.4%	58,210	-2.3%
Romania	5,680	0.2%	--	--	--	--	--	--	2,257	1.5%	--	--	13	-7.1%	30,433	-7.2%
Serbia and Montenegro	2,396	-0.9%	--	--	--	--	--	--	42	-32.3%	--	--	70	--	33,418	0.3%
Slovakia	3,141	0.6%	--	--	--	--	--	--	97	-21.1%	--	--	--	--	3,406	-0.5%
Slovenia	1,250	-3.8%	--	--	--	--	--	--	2	--	--	--	--	--	4,100	-0.8%
Total	36,400	-3.4%	--	--	--	--	--	--	7,810	-1.0%	13	-7.1%	119,000	-0.8%	225,000	-3.5%
Share of world total	2.1%	-7.0%	--	--	--	--	--	--	3.9%	4.6%	(7)	(7)	3.2%	-7.2%	25.5%	-0.1%
Western Europe:																
European Free Trade Association:																
Iceland	130	-16.1%	--	--	--	--	--	--	5	--	--	--	--	--	--	--
Norway	1,850	-1.1%	--	--	--	--	--	--	--	--	--	--	310	-3.1%	--	--
Switzerland	3,600	--	--	--	--	--	--	--	300	--	--	--	--	--	--	--
Total	5,580	-0.8%	--	--	--	--	--	--	305	--	--	--	310	-3.1%	--	--

See footnotes at end of table.

TABLE 4--Continued  
EUROPE AND CENTRAL EURASIA: PRODUCTION OF SELECTED MINERAL COMMODITIES IN 2002<sup>1,2</sup>

(Thousand metric tons unless otherwise specified)

Region and/or country	Industrial minerals--Continued										Mineral fuels					
	Cement, hydraulic		Diamond, natural, gemstones and industrial		Phosphate rock, P <sub>2</sub> O <sub>5</sub> content		Potash, K <sub>2</sub> O equivalent		Salt		Coal					
											Anthracite		Bituminous		Lignite	
	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>	Quantity	Percent change <sup>4</sup>
Western Europe--Continued:																
European Union (EU):																
Austria	3,800	-1.6%	--	--	--	--	--	--	1	--	--	--	--	--	1,200	0.5%
Belgium	8,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Denmark-Greenland	2,010	--	--	--	(5)	--	--	--	600	--	--	--	--	--	--	--
Finland	1,198	-9.6%	--	--	280	1.1%	--	--	--	--	--	--	--	--	--	--
France	20,000	0.8%	--	--	--	--	130	-49.4%	7,000	-1.4%	157	-19.5%	1,743	-19.6%	300	-7.4%
Germany	23,311	-24.8%	--	--	--	--	3,472	-2.2%	8,581	1.4%	2,479	-3.7%	23,884	-3.6%	181,778	3.7%
Greece	15,500	--	--	--	--	--	--	--	250	--	--	--	--	--	65,000	-3.0%
Ireland	2,500	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Italy	40,000	0.3%	--	--	--	--	--	--	3,800	--	--	--	(5)	--	15	--
Luxembourg	700	-3.4%	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Malta	--	--	--	--	--	--	--	--	6	--	--	--	--	--	--	--
Netherlands	3,400	--	--	--	--	--	--	--	3,400	-32.0%	--	--	--	--	--	--
Portugal	10,000	--	--	--	--	--	--	--	604	-3.5%	--	--	--	--	--	--
Spain	40,000	-1.3%	--	--	--	--	550	-3.3%	4,100	--	4,500	-4.1%	5,500	-5.1%	12,000	-1.6%
Sweden	2,700	3.8%	--	--	--	--	--	--	--	--	--	--	--	--	--	--
United Kingdom	12,000	1.2%	--	--	--	--	540	1.5%	6,100	--	600	-40.0%	28,000	-10.0%	--	--
Total	185,000	-4.1%	--	--	280	1.1%	4,690	-4.4%	34,400	-4.4%	7,740	-8.6%	59,100	-7.4%	260,000	1.6%
Total Western Europe	191,000	-4.0%	--	--	280	1.1%	4,690	-4.4%	34,700	-4.4%	7,740	-8.6%	59,400	-7.4%	260,000	1.6%
Share of world total	10.8%	-7.5%	--	--	0.7%	-6.3%	17.7%	-4.8%	17.5%	0.9%	2.8%	-10.7%	1.6%	-13.4%	29.5%	5.3%
Total Europe and Central Eurasia	284,000	-1.5%	23,000	-0.9%	4,750	4.7%	13,000	-0.2%	48,200	-3.3%	37,400	-11.0%	477,000	-0.3%	566,000	-5.1%
Share of world total	16.1%	-5.1%	35.4%	-9.3%	11.1%	-3.0%	48.7%	-0.6%	24.2%	2.0%	13.5%	-13.0%	13.0%	-6.8%	64.1%	-1.6%
United States <sup>6</sup>	91,300	0.9%	--	--	10,700	15.9%	1,200	--	40,300	-10.0%	1,130	-67.7%	916,000	-2.3%	74,800	-1.7%
Share of world total	5.2%	-2.8%	--	--	25.0%	7.5%	4.5%	-0.4%	20.3%	-5.0%	0.4%	-68.4%	24.9%	-8.6%	8.5%	1.8%
World total <sup>6</sup>	1,770,000	3.8%	130,000	8.6%	42,900	7.9%	26,600	0.4%	199,000	-5.3%	278,000	2.4%	3,680,000	6.9%	883,000	-3.5%

See footnotes at end of table.

TABLE 4--Continued  
EUROPE AND CENTRAL ASIA: PRODUCTION OF SELECTED COMMODITIES IN 2002<sup>1,2</sup>

(Thousand metric tons unless otherwise specified)

Region and/or country	Minerals fuels--Continued										
	Natural gas					Petroleum				Uranium, U content	
	Dry		Plant liquids		Crude		Refinery products				
	Quantity (million cubic meters)	Percent change <sup>4</sup>	Quantity (thousand 42-gallon barrels)	Percent change <sup>4</sup>	Quantity (thousand 42-gallon barrels)	Percent change <sup>4</sup>	Quantity (thousand 42-gallon barrels)	Percent change <sup>4</sup>			
	Quantity (metric tons)	Percent change <sup>4</sup>									
Central Eurasia:											
Armenia	--	--	--	--	--	--	--	--	NA	NA	
Azerbaijan	5,144	-6.5%	NA	NA	112,270	2.5%	--	--	--	--	
Belarus	246	-3.5%	--	--	13,568	-0.3%	111,913	14.3%	--	--	
Estonia	--	--	--	--	--	--	--	--	--	--	
Georgia	20	-50.0%	--	--	515	-36.3%	NA	NA	--	--	
Kazakhstan	13,100	12.9%	NA	NA	309,000	5.8%	NA	NA	2,665	30.0%	
Kyrgyzstan	29	-12.1%	--	--	555	--	--	--	--	--	
Latvia	--	--	--	--	--	--	--	--	--	--	
Lithuania	--	--	--	--	3,183	-7.9%	47,326	-1.5%	--	--	
Moldova	--	--	--	--	--	--	--	--	--	--	
Russia	595,000	2.4%	89,790	3.8%	2,790,000	9.0%	1,357,606	3.7%	2,900	16.0%	
Tajikistan	30	-40.0%	--	--	147	--	--	--	--	--	
Turkmenistan	53,000	14.5%	NA	NA	66,150	13.9%	--	--	--	--	
Ukraine	18,400	1.1%	NA	NA	27,305	0.4%	NA	NA	800	6.7%	
Uzbekistan	57,670	2.3%	NA	NA	52,905	0.3%	--	--	1,860	-5.2%	
Total	743,000	3.2%	89,790	-99.4%	3,380,000	8.3%	1,520,000	4.2%	8,230	13.3%	
Share of world total	28.3%	2.1%	6.0%	-93.0%	13.8%	8.8%	5.3%	0.9%	21.4%	8.6%	
Central Europe and Balkans:											
Albania	9	-18.2%	--	--	1,835	-10.7%	2,018,500	-11.3%	--	--	
Bosnia and Herzegovina	--	--	--	--	--	--	500	--	--	--	
Bulgaria	11	-50.0%	--	--	241	3.0%	25,000	--	600	--	
Croatia	2,122	5.6%	--	--	8,207	-1.2%	38,902	-1.9%	--	--	
Czech Republic	91	-9.9%	--	--	1,709	41.6%	35,000	--	477	-2.7%	
Hungary	3,353	2.2%	--	--	8,011	-1.3%	40,000	--	--	--	
Macedonia	--	--	--	--	--	--	6,000	--	--	--	
Poland	5,259	1.6%	--	--	5,349	-6.0%	128,744	-6.1%	--	--	
Romania	13,425	-4.7%	--	--	44,000	-2.4%	75,000	--	--	--	
Serbia and Montenegro	107	-3.6%	--	--	5,052	-8.6%	17,388	32.1%	--	--	
Slovakia	212	--	--	--	400	--	40,000	--	--	--	
Slovenia	6	--	--	--	3,706	-28.5%	--	--	--	--	
Total	24,595	-1.7%	--	--	78,500	-4.0%	2,430,000	-9.7%	1,080	-1.2%	
Share of world total	0.9%	-2.7%	--	--	0.3%	-3.6%	8.5%	-12.7%	2.8%	-5.2%	
Western Europe:											
European Free Trade Association:											
Iceland	--	--	--	--	--	--	--	--	--	--	
Norway	40,000	-2.4%	41,000	--	1,050,000	--	130,000	0.8%	--	--	
Switzerland	--	--	--	--	--	--	20,300	2.0%	--	--	
Total	40,000	-2.4%	41,000	--	1,050,000	--	150,000	0.9%	--	--	

See footnotes at end of table.

TABLE 4--Continued  
EUROPE AND CENTRAL ASIA: PRODUCTION OF SELECTED COMMODITIES IN 2002<sup>1,2</sup>

(Thousand metric tons unless otherwise specified)

Region and/or country	Minerals fuels--Continued									
	Natural gas				Petroleum				Uranium, U content	
	Dry		Plant liquids		Crude		Refinery products			
	Quantity (million cubic meters)	Percent change <sup>4</sup>	Quantity (thousand 42-gallon barrels)	Percent change <sup>4</sup>	Quantity (thousand 42-gallon barrels)	Percent change <sup>4</sup>	Quantity (thousand 42-gallon barrels)	Percent change <sup>4</sup>		
	Quantity (million cubic meters)	Percent change <sup>4</sup>	Quantity (thousand 42-gallon barrels)	Percent change <sup>4</sup>	Quantity (thousand 42-gallon barrels)	Percent change <sup>4</sup>	Quantity (thousand 42-gallon barrels)	Percent change <sup>4</sup>	Quantity (metric tons)	Percent change <sup>4</sup>
Western Europe--Continued:										
European Union (EU):										
Austria	2,000	2.4%	--	--	7,000	-2.5%	72,700	--	--	--
Belgium	--	--	--	--	--	--	262,000	--	--	--
Denmark-Greenland	9,800	1.0%	48,000	2.1%	88,000	-0.1%	79,000	0.4%	--	--
Finland	--	--	--	--	--	--	85,000	--	--	--
France	1,850	2.2%	--	--	10,000	-0.8%	583,000	--	175	-3.8%
Germany	21,529	-0.8%	--	--	27,758	17.6%	1,102,200	3.3%	221	750.0%
Greece	36	--	350	--	1,500	4.5%	173,000	--	--	--
Ireland	2,500	--	--	--	--	--	21,000	--	--	--
Italy	18,000	--	350	--	25,650	-26.7%	693,000	--	--	--
Luxembourg	--	--	--	--	--	--	--	--	--	--
Malta	--	--	--	--	--	--	--	--	--	--
Netherlands	74,000	1.0%	160,000	--	18,000	--	608,000	-0.2%	--	--
Portugal	--	--	--	--	--	--	98,500	--	3	-25.0%
Spain	180	--	--	--	2,500	-0.2%	477,000	--	500	-8.6%
Sweden	--	--	--	--	--	--	156,000	1.3%	--	--
United Kingdom	96,000	--	62,000	--	805,500	-1.9%	705,000	--	--	--
Total	226,000	0.3%	271,000	0.4%	986,000	-2.1%	5,120,000	0.7%	900	18.4%
Total Western Europe	266,000	-0.1%	312,000	0.3%	2,040,000	-1.0%	5,270,000	0.7%	900	18.4%
Share of world total	10.1%	-1.2%	20.9%	987.7%	8.3%	-0.6%	18.5%	-2.5%	2.3%	13.6%
Total Europe and Central Eurasia	1,030,000	2.2%	401,000	-97.2%	5,490,000	4.4%	9,210,000	-1.7%	10,200	12.0%
Share of world total	39.4%	1.2%	26.9%	-69.4%	22.4%	4.9%	32.4%	-4.9%	26.5%	7.4%
United States <sup>6</sup>	538,000	-6.8%	NA	NA	2,100,000	9.5%	6,300,000	4.0%	919	-9.1%
Share of world total	20.5%	-7.8%	NA	NA	8.6%	10.0%	22.2%	0.7%	2.4%	-12.8%
World total <sup>6</sup>	2,620,000	1.1%	1,490,000	-90.8%	24,500,000	-0.5%	28,400,000	3.4%	38,400	4.3%

NA Not available. W Withheld to avoid disclosing proprietary data; not included in region and world totals. -- Zero or 0 percent.

<sup>1</sup>Some of the individual entries in this table may differ from those that appear in individual country production tables elsewhere in this volume owing to the inclusion in this table of data received at a later date.

<sup>2</sup>Totals may not add owing to independent rounding. Percentages are calculated on unrounded data. Table includes data available as of October 2004.

<sup>3</sup>Primary production also includes undifferentiated (primary and secondary) production for some countries listed.

<sup>4</sup>Percent change is calculated, for each region and/or country, by taking 100 times the difference of the current year's data over last year's data minus 100.

<sup>5</sup>Less than 1/2 unit.

<sup>6</sup>U.S. data and world totals are rounded to no more than three significant digits.

<sup>7</sup>Less than 0.1 percent.

TABLE 5  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF BAUXITE

(Metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
France	490,000	75,000	185,000	153,000	160,000	160,000	150,000	150,000
Greece	2,486,000	2,200,000	1,965,561	1,931,497	2,052,000	2,300,000	2,200,000	2,000,000
Total	2,976,000	2,275,000	2,150,561	2,084,497	2,212,000	2,460,000	2,350,000	2,150,000
Central Europe:								
Albania	26,000	--	5,000	5,000	5,000	5,000	5,000	5,000
Bosnia and Herzegovina	1,703,000	75,000	20,700	77,000	113,000	115,000	120,000	120,000
Croatia	309,109	1,500	--	--	--	--	--	--
Hungary	2,559,000	1,015,000	1,046,000	1,000,000	720,000	666,000	650,000	650,000
Romania	242,800	175,000	--	--	--	--	--	--
Serbia and Montenegro	940,000	60,000	630,000	610,000	612,000	590,000	600,000	700,000
Total	5,779,909	1,326,500	1,701,700	1,692,000	1,450,000	1,380,000	1,380,000	1,480,000
Central Eurasia:								
Kazakhstan	3,100,000	3,071,000	3,730,000	3,685,000	4,377,000	4,737,000	5,000,000	5,000,000
Russia	4,000,000	4,000,000	4,200,000	4,000,000	3,800,000	5,500,000	6,000,000	6,500,000
Total	7,100,000	7,071,000	7,930,000	7,685,000	8,177,000	10,200,000	11,000,000	11,500,000
Regional total	15,855,909	10,672,500	11,782,261	11,461,497	11,839,000	14,000,000	14,700,000	15,100,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

TABLE 6  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF ALUMINUM (PRIMARY)

(Metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
<b>Europe:</b>								
<b>Western Europe:</b>								
France	325,000	366,000	441,000	462,000	464,000	460,000	450,000	450,000
Germany	720,000	575,000	644,000	652,000	653,000	650,000	650,000	600,000
Greece	149,000	144,000	168,000	168,000	164,000	165,000	160,000	150,000
Iceland	87,000	100,100	224,000	245,000	264,000	280,000	300,000	320,000
Italy	232,000	178,000	190,000	187,000	190,000	200,000	190,000	180,000
Netherlands	269,000	216,000	301,000	294,000	284,000	275,000	275,000	250,000
Norway	894,000	902,500	1,026,000	1,068,000	1,096,000	1,000,000	1,105,000	1,110,000
Spain	353,000	362,000	366,000	376,000	380,000	375,000	375,000	350,000
Sweden	126,300	117,500	101,000	102,000	101,000	101,000	103,000	105,000
Switzerland	72,000	21,000	36,000	36,000	36,000	36,000	36,000	36,000
United Kingdom	294,000	238,000	305,000	341,000	344,000	325,000	325,000	300,000
Total	3,521,300	3,220,100	3,802,000	3,931,000	3,976,000	3,870,000	3,970,000	3,850,000
<b>Central Europe:</b>								
Bosnia and Herzegovina	89,000	15,000	95,000	96,000	103,000	105,000	105,000	110,000
Croatia	74,037	30,944	15,000	16,000	--	--	--	--
Hungary	105,162	29,000	34,000	34,000	35,000	35,000	35,000	35,000
Poland	46,000	56,000	47,000	45,000	49,000	51,000	53,000	53,000
Romania	178,000	144,000	179,000	182,000	187,000	185,000	185,000	185,000
Serbia and Montenegro	81,000	17,000	88,000	100,000	112,000	118,000	120,000	120,000
Slovakia	30,100	38,100	137,000	134,000	147,000	150,000	155,000	155,000
Slovenia	99,500	57,700	84,000	77,000	88,000	90,000	90,000	90,000
Total	702,799	387,744	679,000	684,000	721,000	734,000	743,000	748,000
<b>Central Eurasia:</b>								
Azerbaijan	50,000	27,000	--	--	--	10,000	20,000	40,000
Kazakhstan	--	--	--	--	--	--	--	30,000
Russia	2,700,000	2,724,000	3,245,000	3,300,000	3,347,000	3,500,000	3,600,000	3,700,000
Tajikistan	450,000	230,000	300,000	289,000	308,000	320,000	330,000	340,000
Ukraine	100,000	98,000	104,000	106,000	112,000	114,000	120,000	130,000
Total	3,300,000	3,079,000	3,649,000	3,695,000	3,767,000	3,940,000	4,070,000	4,240,000
Regional total	7,524,099	6,686,844	8,130,000	8,310,000	8,464,000	8,550,000	8,780,000	8,840,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.



TABLE 7  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF ALUMINUM (SECONDARY)

(Thousand metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>e</sup>	2005 <sup>e</sup>	2007 <sup>e</sup>
Europe:								
Western Europe:								
Austria	36	94	158	150	150	150	150	150
Belgium	7	4	1	1	1	1	1	1
Denmark-Greenland	11	35	16	18	18	20	20	18
Finland	24	35	45	34	30	33	32	32
France	208	231	260	253	262	265	265	265
Germany	590	531	572	620	666	670	670	670
Greece	3	3	3	3	2	2	2	2
Italy	350	412	658	575	590	600	600	600
Netherlands	134	192	119	120	120	120	120	120
Norway	49	56	260	265	270	260	260	260
Portugal	NA	NA	18	18	16	16	16	16
Spain	63	107	241	222	243	240	240	240
Sweden	30	23	26	25	28	30	32	32
Switzerland	34	11	15	6	6	6	6	6
United Kingdom	121	282	285	249	205	225	225	225
Total	1,660	2,016	2,677	2,559	2,607	2,640	2,640	2,640
Central Europe:								
Bosnia and Herzegovina	10	10	5	4	5	5	5	5
Bulgaria	5	5	8	2	2	5	10	15
Czech Republic	--	48	40	20	20	20	30	50
Hungary	30	4	55	76	75	75	75	75
Macedonia	5	4	3	3	3	3	3	5
Poland	--	5	5	4	4	5	5	5
Romania	10	3	2	--	--	--	--	--
Total	60	79	118	109	109	113	128	155
Central Eurasia: <sup>1</sup>								
Russia	NA	75	125	125	130	130	150	175
Ukraine	NA	98	129	130	130	130	130	130
Uzbekistan	NA	3	2	3	3	3	3	3
Total	NA	176	256	258	263	263	283	308
Regional total	1,720	2,271	3,051	2,926	2,979	3,010	3,050	3,100

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. NA Not available. -- Zero.

<sup>1</sup>Information about the amount of secondary aluminum collected and processed in the other member countries of the Commonwealth of Independent States (C

TABLE 8  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF COPPER (MINE OUTPUT)

(Cu content, metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
Finland	12,600	9,790	14,354	13,715	14,400	13,000	14,000	14,000
France	483	--	--	--	--	--	--	--
Norway	19,745	6,799	700	700	700	700	700	700
Portugal	159,841	129,726	76,200	83,000	77,200	90,000	100,000	100,000
Spain	13,300	24,519	23,312	9,750	--	12,000	12,000	12,000
Sweden	74,300	83,603	77,765	74,269	72,100	70,000	72,000	74,000
United Kingdom	955	--	--	--	--	--	--	--
Total	281,224	254,437	192,331	181,434	164,400	186,000	199,000	201,000
Central Europe:								
Albania	11,500	3,800	--	--	--	1,000	2,000	5,000
Bulgaria	26,000	76,000	92,000	88,000	84,000	85,000	90,000	90,000
Macedonia	7,300	6,000	6,000	9,000	6,000	10,000	10,000	15,000
Poland	329,000	384,200	454,000	474,000	503,000	500,000	550,000	550,000
Romania	32,000	24,500	16,100	19,000	17,000	20,000	20,000	25,000
Serbia and Montenegro	110,000	74,600	56,000	31,000	37,000	50,000	60,000	75,000
Slovakia	3,100	--	--	--	--	--	--	--
Total	518,900	569,100	624,100	621,000	647,000	666,000	732,000	760,000
Central Eurasia:								
Armenia	15,000	8,000	12,000	16,000	17,000	20,000	23,000	25,000
Georgia	10,000	5,000	8,000	8,000	8,000	8,000	8,000	9,000
Kazakhstan	400,000	200,000	430,000	470,000	473,000	480,000	490,000	500,000
Russia	650,000	525,000	570,000	600,000	695,000	700,000	700,000	720,000
Uzbekistan	70,000	40,000	65,000	65,000	65,000	70,000	75,000	80,000
Total	1,145,000	778,000	1,085,000	1,159,000	1,258,000	1,280,000	1,300,000	1,330,000
Regional total	1,945,124	1,601,537	1,901,431	1,961,434	2,069,400	2,130,000	2,230,000	2,290,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

TABLE 9  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF REFINED COPPER (PRIMARY AND SECONDARY)

(Metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
<b>Europe:</b>								
<b>Western Europe:</b>								
Austria	--	54,000	79,000	70,000	70,000	60,000	60,000	60,000
Belgium	331,857	376,000	4,223,100	425,000	425,000	400,000	400,000	375,000
Finland	65,100	73,700	114,035	119,677	127,136	130,000	132,000	135,000
France	44,034	42,500	1,500	1,500	500	1,200	1,000	1,000
Germany	476,200	616,390	709,400	693,800	595,800	650,000	650,000	650,000
Italy	83,000	98,000	72,800	35,500	32,400	30,000	25,000	25,000
Norway	36,500	34,300	27,000	26,700	31,500	31,000	32,000	32,000
Spain	170,567	164,213	316,000	290,700	322,400	300,000	275,000	275,000
Sweden	97,300	105,100	130,000	204,000	224,000	226,000	228,000	230,000
United Kingdom	121,634	54,799	3,000	45,000	--	--	--	--
Total	1,426,192	1,619,002	5,675,835	1,911,877	1,828,736	1,830,000	1,800,000	1,780,000
<b>Central Europe:</b>								
Albania	11,000	3,000	--	--	--	--	--	--
Bulgaria	24,300	28,800	32,400	34,400	40,000	40,000	45,000	50,000
Czech Republic	20,800	20,000	20,000	18,000	18,000	20,000	20,000	20,000
Hungary	12,800	11,000	12,000	12,000	10,000	5,000	5,000	5,000
Poland	346,000	406,700	486,002	498,451	508,674	530,000	550,000	550,000
Romania	44,300	27,000	19,303	22,522	13,453	20,000	25,000	30,000
Serbia and Montenegro	151,000	78,500	45,632	32,365	35,897	45,000	50,000	60,000
Slovakia	24,600	29,000	1,500	1,500	1,500	2,000	2,000	2,000
Total	634,800	604,000	616,837	619,238	627,524	662,000	697,000	717,000
<b>Central Eurasia:</b>								
Kazakhstan	700,000	560,000	840,000	895,000	870,000	900,000	930,000	950,000
Russia	365,000	255,500	394,722	425,700	453,000	460,000	470,000	480,000
Uzbekistan	110,000	95,000	80,000	80,000	80,000	85,000	90,000	95,000
Total	1,175,000	910,500	1,314,722	1,400,700	1,403,000	1,450,000	1,490,000	1,530,000
Regional total	3,235,992	3,133,502	7,607,394	3,931,815	3,859,260	3,940,000	3,990,000	4,030,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

TABLE 10  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF GOLD

(Kilograms)

Region and country	1990	1995	2000	2001	2002	2003 <sup>e</sup>	2005 <sup>e</sup>	2007 <sup>e</sup>
Europe:								
Western Europe:								
Austria	58	100	100	50	50	25	25	25
Finland	2,810	2,061	4,951	5,552	4,666	4,600	4,800	5,000
France	4,236	4,615	2,632	2,510	2,600	2,500	2,000	2,000
Italy	--	--	791	530	600	700	800	1,000
Portugal	276	--	--	--	--	--	--	--
Spain	6,814	4,131	4,310	3,720	3,600	3,600	3,500	3,500
Sweden	6,330	6,528	3,570	4,986	4,800	4,700	4,900	4,900
Total	20,524	17,435	16,354	17,348	16,316	16,100	16,000	16,400
Central Europe:								
Bulgaria	2,400	3,100	2,347	2,540	2,612	3,000	3,500	3,500
Czech Republic	187	--	3,000	2,000	2,000	1,100	1,000	1,000
Macedonia	--	760	750	500	500	400	400	300
Poland	300	510	367	349	296	330	350	400
Romania	3,000	4,000	3,500	3,500	3,000	3,000	3,500	4,000
Serbia and Montenegro	8,170	3,040	1,121	800	3,600	3,000	3,000	3,000
Slovakia	500	518	306	157	77	75	75	50
Total	14,557	11,928	11,391	9,846	12,085	10,900	11,800	12,300
Central Eurasia:								
Armenia	1,000	514	600	1,900	3,200	4,000	4,200	4,400
Georgia	2,000	500	2,924	2,000	2,000	2,000	2,500	3,000
Kazakhstan	30,000	18,200	28,171	25,010	22,402	25,000	25,000	30,000
Kyrgyzstan	2,000	1,500	22,000	24,000	18,000	23,000	25,000	27,000
Russia	183,000	131,938	142,738	152,500	158,000	170,000	190,000	200,000
Tajikistan	2,500	500	5,000	5,000	5,000	5,000	5,000	5,000
Uzbekistan	65,000	65,000	89,900	80,000	80,000	90,000	95,000	100,000
Total	285,500	218,152	291,333	290,410	288,602	319,000	347,000	369,000
Regional total	320,581	247,515	319,078	317,604	317,003	346,000	375,000	398,000

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

TABLE 11  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF IRON ORE (MINE OUTPUT)

(Iron content, metric tons)

Region and country	Average iron content	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
<b>Europe:</b>									
<b>Western Europe:</b>									
Austria	58%	653,000	709,000	553,000	586,000	581,000	500,000	300,000	100,000
France	28%	2,793,000	432,000	--	--	--	--	--	--
Germany	14%	11,686	960	--	--	--	--	--	--
Greece	38%	861,000	800,000	575,000	575,000	600,000	600,000	500,000	500,000
Norway	62%	1,350,000	1,348,000	369,000	340,000	350,000	330,000	320,000	300,000
Portugal	36%	5,210	5,417	11,800	11,000	10,000	10,000	10,000	10,000
Spain	38%	1,438,000	960,000	66,907	--	--	--	--	--
Sweden	65%	12,900,000	13,880,000	13,556,000	12,811,000	13,000,000	13,000,000	13,200,000	13,500,000
United Kingdom	50%	12,000	568	540	270	270	160	110	55
Total	XX	20,023,896	18,135,945	15,132,247	14,323,270	14,541,270	14,400,000	14,300,000	14,400,000
<b>Central Europe:</b>									
Albania	45%	410,000	--	--	--	--	--	--	--
Bosnia and Herzegovina	53%	1,580,000	52,000	191,000	117,000	70,000	80,000	85,000	100,000
Bulgaria	50%	270,000	265,000	178,000	92,000	105,000	100,000	100,000	75,000
Czech Republic	29%	60,000	10,000	6,000	6,000	--	--	--	--
Macedonia	40%	3,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Poland	50%	130	--	--	--	--	--	--	--
Romania	52%	275,000	147,000	55,000	76,000	77,000	80,000	70,000	70,000
Serbia and Montenegro	45%	650,000	61,000	500	--	--	--	--	--
Slovakia	48%	480,000	225,000	255,000	238,000	175,000	175,000	150,000	100,000
Total	XX	3,728,130	761,000	686,500	530,000	428,000	436,000	406,000	346,000
<b>Central Eurasia:</b>									
Azerbaijan	57%	275,000	825	--	2,600	--	--	--	--
Kazakhstan	57%	13,000,000	8,000,000	9,200,000	8,000,000	8,700,000	10,000,000	11,000,000	12,000,000
Russia	58%	60,000,000	46,000,000	50,000,000	48,000,000	49,000,000	53,000,000	56,000,000	57,000,000
Ukraine	55%	50,000,000	29,000,000	30,600,000	30,000,000	32,300,000	34,000,000	34,000,000	34,000,000
Total	XX	123,275,000	83,000,825	89,800,000	86,002,600	90,000,000	97,000,000	101,000,000	103,000,000
Regional total	XX	147,027,026	101,897,770	105,618,747	100,855,870	104,969,270	112,000,000	116,000,000	118,000,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. XX Not applicable. -- Zero.

TABLE 12  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF PIG IRON AND DIRECT-REDUCED IRON

(Metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
Austria	3,070,000	3,838,000	4,318,000	4,375,000	4,669,000	4,600,000	4,500,000	4,500,000
Belgium	8,524,000	9,199,000	8,472,000	7,732,000	7,800,000	7,700,000	7,800,000	7,800,000
Finland	2,280,000	2,242,000	2,983,000	2,900,000	3,000,000	2,800,000	2,800,000	2,830,000
France	14,415,000	12,860,000	13,661,000	12,004,000	13,217,000	13,000,000	13,000,000	1,300,000
Germany	29,600,000	30,012,000	30,846,000	29,184,000	29,427,000	30,000,000	30,000,000	30,000,000
Italy	11,900,000	11,684,000	11,219,000	10,650,000	9,736,000	10,000,000	10,000,000	10,000,000
Netherlands	4,960,000	5,646,500	4,969,000	5,305,000	5,000,000	5,000,000	5,000,000	5,000,000
Norway	54,000	70,000	60,000	60,000	60,000	80,000	70,000	70,000
Portugal	339,000	411,000	382,000	82,000	100,000	100,000	100,000	100,000
Spain	5,540,000	5,128,000	4,059,000	4,094,000	3,978,000	4,000,000	4,000,000	4,000,000
Sweden	2,830,000	3,144,000	3,146,000	3,614,000	3,700,000	3,820,000	3,840,000	3,860,000
Switzerland	129,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
United Kingdom	12,300,000	12,236,000	10,989,000	9,861,000	8,579,000	8,600,000	8,500,000	8,500,000
Total	95,941,000	96,570,500	95,204,000	89,961,000	89,366,000	89,800,000	89,700,000	78,100,000
Central Europe:								
Albania	96,000	--	--	--	--	--	--	--
Bosnia and Herzegovina	1,280,000	100,000	57,000	60,000	60,000	60,000	50,000	50,000
Bulgaria	1,140,000	1,581,000	1,220,000	1,211,000	1,072,000	1,000,000	1,000,000	1,000,000
Czech Republic	5,800,000	5,289,000	4,621,000	4,677,000	4,840,000	4,800,000	4,800,000	4,800,000
Hungary	1,415,000	1,515,000	1,340,000	1,225,000	1,334,000	1,300,000	1,300,000	1,300,000
Macedonia	53,000	--	--	--	--	--	--	--
Poland	8,660,000	7,373,000	6,492,000	5,440,000	5,296,000	5,600,000	5,600,000	5,700,000
Romania	6,360,000	4,203,000	3,066,000	3,243,000	3,976,000	4,100,000	4,100,000	4,200,000
Serbia and Montenegro	767,000	107,836	563,000	461,000	485,000	700,000	700,000	800,000
Slovakia	3,560,000	3,207,000	3,166,000	3,255,000	3,533,000	3,900,000	3,900,000	3,900,000
Total	29,131,000	23,375,836	20,525,000	19,572,000	20,596,000	21,500,000	21,500,000	21,800,000
Central Eurasia:								
Kazakhstan	4,600,000	3,438,000	4,000,000	3,906,500	4,089,100	4,100,000	4,200,000	4,300,000
Russia	47,500,000	41,400,000	44,618,100	46,880,000	48,060,000	51,000,000	52,000,000	52,000,000
Ukraine	35,000,000	20,000,000	25,700,000	26,400,000	27,560,000	29,600,000	31,000,000	31,000,000
Total	87,100,000	64,838,000	74,318,100	77,186,500	79,709,100	84,700,000	87,200,000	87,300,000
Regional total	212,172,000	184,784,336	190,047,100	186,719,500	189,671,100	196,000,000	198,000,000	187,000,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

TABLE 13  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF CRUDE STEEL

(Metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
Austria	4,241,000	4,537,000	5,725,000	5,887,000	6,208,000	6,000,000	6,000,000	6,000,000
Belgium	11,419,000	11,606,000	11,635,000	10,763,000	11,000,000	11,000,000	11,000,000	11,000,000
Denmark	610,000	654,000	803,000	746,000	392,000	400,000	400,000	410,000
Finland	2,861,000	3,176,000	4,096,000	3,938,000	4,004,000	4,200,000	4,300,000	4,400,000
France	19,015,000	18,096,000	21,002,000	19,431,000	20,524,000	20,000,000	20,000,000	18,000,000
Germany	43,981,000	42,051,000	46,376,000	44,803,000	45,015,000	45,000,000	42,000,000	42,000,000
Greece	999,000	939,170	1,088,000	1,281,000	1,835,000	1,800,000	1,600,000	1,600,000
Ireland	326,000	309,000	342,000	110,000	--	--	--	--
Italy	25,439,000	27,766,000	26,475,000	25,483,000	25,930,000	25,000,000	24,000,000	24,000,000
Luxembourg	3,560,000	5,320,000	2,571,000	2,725,000	2,700,000	2,800,000	2,600,000	2,600,000
Netherlands	5,412,000	6,409,000	5,667,000	6,037,000	6,000,000	6,100,000	6,000,000	6,000,000
Norway	376,000	503,000	620,000	635,000	694,000	640,000	650,000	660,000
Portugal	744,000	829,000	1,097,000	728,000	800,000	800,000	700,000	600,000
Spain	12,718,000	13,975,000	15,844,000	15,834,000	16,358,000	16,500,000	16,250,000	16,000,000
Sweden	4,454,000	4,953,000	5,227,000	5,518,000	5,754,000	5,650,000	5,750,000	5,800,000
Switzerland	970,000	1,000,000	1,140,000	1,100,000	1,100,000	1,000,000	1,000,000	1,000,000
United Kingdom	17,908,000	17,604,000	15,306,000	13,610,000	11,718,000	12,000,000	11,000,000	10,000,000
Total	155,033,000	159,727,170	165,014,000	158,629,000	160,032,000	159,000,000	153,000,000	150,000,000
Central Europe:								
Albania	65,000	22,000	64,700	94,100	96,600	97,000	100,000	100,000
Bosnia and Herzegovina	1,648,000	--	77,000	84,000	70,000	70,000	80,000	85,000
Bulgaria	2,185,000	2,724,000	2,023,000	1,942,000	1,860,000	2,000,000	2,000,000	2,000,000
Croatia	423,533	45,373	71,021	57,992	33,851	43,000	45,000	55,000
Czech Republic	9,996,000	7,189,000	6,216,000	6,316,000	6,512,000	6,800,000	6,800,000	6,800,000
Hungary	2,963,000	1,865,000	1,969,000	2,056,000	2,141,000	2,000,000	2,100,000	2,200,000
Macedonia	247,000	33,000	161,000	260,000	260,000	290,000	300,000	300,000
Poland	13,625,000	11,890,000	10,508,000	8,809,000	8,367,000	9,100,000	9,100,000	9,200,000
Romania	9,761,000	6,557,000	4,672,000	4,936,000	5,491,000	5,700,000	5,700,000	5,700,000
Serbia and Montenegro	1,012,000	180,496	682,000	598,000	596,000	700,000	700,000	700,000
Slovakia	4,779,000	3,958,000	3,733,000	3,989,000	4,275,000	4,500,000	4,500,000	4,500,000
Slovenia	504,000	407,000	519,000	462,000	481,000	500,000	500,000	500,000
Total	47,208,533	34,870,869	30,695,721	29,604,092	30,183,451	31,800,000	31,900,000	32,100,000
Central Eurasia:								
Azerbaijan	NA	12,000	--	1,605	524	1,500	250,000	300,000
Belarus	NA	744,000	1,623,000	1,611,000	1,607,000	1,700,000	2,000,000	2,100,000
Georgia	1,200,000	84,000	5,000	5,000	5,000	--	100,000	200,000
Kazakhstan	6,754,000	3,027,000	4,770,000	4,691,000	4,868,000	5,100,000	5,300,000	5,600,000
Latvia	500,000	279,000	500,292	W	W	505,000	510,000	510,000

See footnotes at end of table.

TABLE 13--Continued  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF CRUDE STEEL

(Metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Central Eurasia--Continued:								
Moldova	NA	663,000	909,000	966,000	900,000	900,000	1,100,000	1,200,000
Russia	89,600,000	51,600,000	59,097,500	59,030,000	59,777,000	63,000,000	66,000,000	70,000,000
Ukraine	55,000,000	23,309,000	31,780,000	33,110,000	34,538,000	37,000,000	38,000,000	39,000,000
Uzbekistan	NA	352,000	420,000	460,000	450,000	470,000	500,000	500,000
Total	153,054,000	80,070,000	99,104,792	99,874,605	102,145,524	109,000,000	114,000,000	119,000,000
Regional total	355,295,533	274,668,039	294,814,513	288,107,697	292,360,975	299,000,000	299,000,000	302,000,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. NA Not available. W Witheld to avoid disclosing proprietary data; not included in totals. -- Zero.



TABLE 14  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF LEAD (MINE OUTPUT)

(Pb content, metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
France	1,141	--	--	--	--	--	--	--
Germany	8,600	--	--	--	--	--	--	--
Greece	26,200	14,283	18,235	28,619	29,300	28,000	28,000	28,000
Ireland	35,300	46,100	57,825	44,500	32,500	60,000	65,000	65,000
Italy	15,600	15,400	2,000	1,000	500	500	--	--
Spain	61,472	30,346	40,300	36,000	5,000	1,500	--	--
Sweden	98,300	137,200	106,584	85,975	37,600	38,000	40,000	42,000
United Kingdom	1,380	1,600	1,000	800	700	700	700	700
Total	247,993	244,929	225,944	196,894	105,600	129,000	134,000	136,000
Central Europe:								
Bosnia and Herzegovina	7,500	150	200	200	200	200	200	200
Bulgaria	57,000	33,000	14,000	16,000	24,000	25,000	25,000	25,000
Macedonia	15,000	17,000	24,000	20,000	15,000	15,000	15,000	20,000
Poland	90,300	99,400	113,800	121,600	120,000	120,000	100,000	80,000
Romania	25,100	23,200	18,750	19,676	18,102	18,000	20,000	25,000
Serbia and Montenegro	15,200	3,300	26,000	19,000	11,500	1,500	1,500	3,000
Total	210,100	176,050	196,750	196,476	188,802	180,000	162,000	153,000
Central Eurasia:								
Georgia	NA	NA	200	200	200	200	200	200
Kazakhstan	200,000	70,000	40,000	37,700	45,500	40,000	45,000	50,000
Russia	30,000	23,000	13,300	12,300	13,500	14,500	15,000	15,000
Tajikistan	2,000	500	800	800	800	800	800	800
Total	232,000	93,500	54,300	51,000	60,000	55,500	61,000	66,000
Regional total	690,093	514,479	476,994	444,370	354,402	364,000	356,000	355,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. NA Not available. -- Zero.

TABLE 15  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF REFINED LEAD (PRIMARY)

(Metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
Belgium	106,809	95,300	98,000	80,000	75,000	80,000	90,000	90,000
France	162,260	128,708	109,868	98,257	84,000	80,000	80,000	80,000
Germany	207,600	146,750	210,515	153,743	142,000	150,000	125,000	125,000
Greece	--	--	6,000	5,000	5,000	5,000	5,000	5,000
Italy	64,600	84,900	75,000	82,000	45,000	15,000	--	--
Sweden	47,500	39,700	30,604	31,322	30,000	27,000	30,000	32,000
United Kingdom	156,000	150,000	166,411	202,915	207,719	180,000	180,000	180,000
Total	744,769	645,358	696,398	653,237	588,719	537,000	510,000	512,000
Central Europe:								
Bosnia and Herzegovina	250	100	100	100	100	100	200	300
Bulgaria	66,600	71,200	84,100	88,300	66,000	70,000	80,000	80,000
Macedonia	22,000	22,500	22,900	19,700	19,800	10,000	15,000	20,000
Poland	64,800	66,421	55,900	66,000	68,000	68,000	68,000	65,000
Romania	15,700	22,000	25,000	24,000	26,000	23,000	25,000	30,000
Serbia and Montenegro	48,000	23,600	1,242	--	--	500	1,000	2,000
Total	217,350	205,821	189,242	198,100	179,900	172,000	189,000	197,000
Central Eurasia:								
Kazakhstan	290,300	88,500	185,800	177,489	183,805	140,000	180,000	200,000
Russia	35,000	23,000	59,000	67,500	60,350	60,000	65,000	65,000
Total	325,300	111,500	244,800	244,989	244,155	200,000	245,000	265,000
Regional total	1,287,419	962,679	1,130,440	1,096,326	1,012,774	909,000	944,000	974,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

TABLE 16  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF REFINED LEAD (SECONDARY)

(Metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
Austria	15,120	21,919	24,000	22,000	20,000	20,000	20,000	20,000
Belgium	100,000	26,400	20,000	16,000	20,000	20,000	20,000	20,000
France	108,210	168,000	158,226	143,338	112,000	125,000	130,000	125,000
Germany	186,700	164,400	204,000	219,640	239,000	210,000	200,000	200,000
Greece	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
Ireland	15,000	11,000	9,000	9,800	12,000	7,000	8,000	8,000
Italy	102,000	95,500	160,000	121,000	150,000	150,000	160,000	160,000
Netherlands	44,000	20,000	22,200	24,000	22,000	25,000	20,000	20,000
Portugal	6,000	7,700	5,000	4,000	4,000	4,000	4,000	4,000
Spain	50,000	80,000	120,000	121,600	100,000	100,000	100,000	100,000
Sweden	22,100	51,500	47,255	44,056	39,700	43,000	45,000	45,000
Switzerland	6,000	6,000	10,100	9,800	9,800	8,000	6,000	6,000
United Kingdom	174,000	171,000	170,740	163,390	166,927	170,000	170,000	170,000
Total	834,130	828,419	955,521	903,624	900,427	887,000	888,000	883,000
Central Europe:								
Czech Republic	NA	20,000	28,000	30,000	29,000	20,000	20,000	20,000
Poland	NA	38,600	46,400	39,500	44,700	45,000	40,000	40,000
Romania	5,000	4,000	3,000	3,000	3,000	3,000	3,000	3,000
Slovenia	12,200	7,237	15,300	15,400	15,400	15,000	15,000	15,000
Total	17,200	69,837	92,700	87,900	92,100	83,000	78,000	78,000
Central Eurasia, Ukraine	10,000	10,000	15,034	12,000	15,000	12,000	16,000	17,000
Regional total	861,330	908,256	1,063,255	1,003,524	1,007,527	982,000	982,000	978,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. NA Not available. -- Zero.

TABLE 17  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF NICKEL (MINE OUTPUT)

(Ni content, metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
Finland	11,500	3,439	2,600	2,000	2,500	2,400	2,200	2,000
Greece	18,500	19,974	17,126	16,870	17,000	18,000	17,000	16,000
Norway	3,100	3,386	2,538	2,529	1,700	1,600	1,400	1,200
Spain	--	--	--	--	--	--	--	5,000
Total	33,100	26,799	22,264	21,399	21,200	22,000	20,600	24,200
Central Europe:								
Albania	8,800	--	--	--	--	--	--	--
Macedonia	--	3,500	--	3,100	5,100	5,000	5,000	5,000
Total	8,800	3,500	--	3,100	5,100	5,000	5,000	5,000
Central Eurasia, Russia	380,000	250,000	315,000	325,000	310,000	315,000	320,000	330,000
Regional total	421,900	280,299	337,264	349,499	336,300	342,000	346,000	359,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

TABLE 18  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF PLATINUM (MINE OUTPUT)

(Kilograms)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
Finland	60	37	441	510	508	500	500	500
Germany	65,000	65,000	50,000	50,000	50,000	50,000	50,000	50,000
Norway	1,500	1,500	1,000	1,000	1,000	1,000	1,000	1,000
Total	66,560	66,537	51,441	51,510	51,508	51,500	51,500	51,500
Central Europe:								
Poland	--	21	21	20	20	20	20	20
Serbia and Montenegro	21	6	3	1	1	1	1	1
Total	21	27	24	21	21	21	21	21
Central Eurasia, Russia	44,000	31,000	34,000	35,000	34,000	36,000	37,000	37,000
Regional total	110,581	97,564	85,465	86,531	85,529	87,500	88,500	88,500

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

TABLE 19  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF PALLADIUM (MINE OUTPUT)

(Kilograms)

Region and country	1990	1995	2000	2001		2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Central Europe:								
Poland	--	12	12	12	12	10	10	10
Serbia and Montenegro	130	46	21	10	10	8	8	8
Total	130	58	33	22	22	18	18	18
Central Eurasia, Russia	91,000	65,000	71,000	72,000	69,000	75,000	77,000	77,000
Regional total	91,130	65,058	71,033	72,022	69,022	75,000	77,000	77,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

TABLE 20  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF SILVER (MINE OUTPUT)

(Kilograms)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
Finland	28,500	26,098	25,364	23,998	29,404	28,000	29,000	29,000
France	22,190	3,500	720	800	600	700	700	700
Germany	8,000	--	--	--	--	--	--	--
Greece	62,600	33,000	37,145	61,500	74,800	80,000	80,000	80,000
Ireland	8,800	13,700	25,100	19,300	5,000	20,000	25,000	25,000
Italy	14,000	13,900	4,000	3,500	3,500	3,000	--	--
Portugal	722	38,600	20,430	23,100	22,500	24,000	22,000	20,000
Spain	270,000	123,615	83,000	60,000	50,000	50,000	50,000	50,000
Sweden	243,000	268,200	328,737	306,029	299,300	305,000	306,000	307,000
United Kingdom	2,695	--	--	--	--	--	--	--
Total	660,507	520,613	524,496	498,227	485,104	511,000	513,000	512,000
Central Europe:								
Bulgaria	54,000	30,000	55,000	57,000	60,000	60,000	65,000	70,000
Czech Republic	16,200	--	25,000	25,000	25,000	25,000	20,000	15,000
Macedonia	15,500	16,000	20,000	15,000	12,000	10,000	10,000	10,000
Poland	832,000	1,001,000	1,144,000	1,190,000	1,222,000	1,300,000	1,300,000	1,400,000
Romania	80,000	60,000	18,000	12,000	18,000	20,000	25,000	25,000
Serbia and Montenegro	85,900	31,100	9,068	5,745	6,838	1,000	2,000	5,000
Total	1,083,600	1,138,100	1,271,068	1,304,745	1,343,838	1,420,000	1,420,000	1,530,000
Central Eurasia:								
Armenia	1,000	184	1,300	3,000	5,500	4,000	4,000	4,000
Georgia	50,000	20,000	33,884	33,000	33,000	33,000	35,000	40,000
Kazakhstan	700,000	489,000	927,100	981,900	892,100	800,000	850,000	900,000
Russia	660,000	300,000	370,000	380,000	400,000	700,000	800,000	900,000
Tajikistan	5,000	5,000	5,000	5,000	50,000	50,000	50,000	50,000
Uzbekistan	70,000	70,000	89,900	80,000	80,000	80,000	85,000	90,000
Total	1,486,000	884,184	1,427,184	1,482,900	1,460,600	1,670,000	1,820,000	1,980,000
Regional total	3,230,107	2,542,897	3,222,748	3,285,872	3,289,542	3,590,000	3,760,000	4,020,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

TABLE 21  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF TIN (MINE OUTPUT)

(Sn content, metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
Portugal	1,400	4,627	1,227	1,174	361	400	400	400
Spain	27	2,047	1,819	708	500	250	200	200
Total	1,427	6,674	3,046	1,882	861	650	600	600
Central Europe	NA	NA	NA	NA	NA	NA	NA	NA
Central Eurasia:								
Kyrgyzstan	--	--	300	300	300	350	400	500
Russia	8,000	3,700	5,000	4,500	2,900	2,000	3,500	4,000
Total	8,000	3,700	5,300	4,800	3,200	2,350	3,900	4,500
Regional total	9,427	10,374	8,346	6,682	4,061	3,000	4,500	5,100

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. NA Not available. -- Zero.



TABLE 22  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF TIN (REFINED METAL)

(Metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe, Germany	NA	NA	500	100	100	NA	NA	NA
Central Europe, Bulgaria	10	10	10	10	10	NA	NA	NA
Central Eurasia, Russia	9,000	4,500	4,200	3,600	3,650	6,000	6,000	7,000
Regional total	9,010	4,510	4,710	3,710	3,760	6,000	6,000	7,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. NA Not available.

TABLE 23  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF ILMENITE

(TiO<sub>2</sub> content, metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Western Europe, Norway	361,000	325,000	340,000	340,000	340,000	350,000	350,000	350,000
Central Eurasia, Ukraine	350,000	150,000	242,000	273,000	281,000	280,000	280,000	320,000
Regional total	711,000	475,000	582,000	613,000	621,000	630,000	630,000	670,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 24  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF TUNGSTEN

(W content of concentrate, metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Western Europe:								
Austria	1,378	738	1,600	1,237	1,400	1,400	1,200	1,000
France	--	600	500	500	500	500	500	500
Portugal	1,400	873	743	698	693	700	650	600
Total	2,778	2,211	2,843	2,435	2,593	2,600	2,350	2,100
Central Eurasia, Russia	8,000	4,000	3,500	3,500	3,400	3,900	4,000	4,200
Regional total	10,778	6,211	6,343	5,935	5,993	6,500	6,350	6,300

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

TABLE 25  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF ZINC (MINE OUTPUT)

(Zn content, metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
Finland	51,700	16,385	30,493	36,253	61,580	40,000	60,000	60,000
France	23,921	--	--	--	--	--	--	--
Germany	58,100	--	--	--	--	--	--	--
Greece	26,700	15,083	20,336	20,461	30,000	30,000	30,000	30,000
Ireland	166,400	183,500	262,877	225,135	252,700	400,000	400,000	400,000
Italy	42,400	23,100	--	--	--	--	--	--
Norway	17,500	9,877	--	--	--	--	--	--
Spain	257,500	172,469	200,021	164,900	69,900	40,000	--	--
Sweden	164,000	167,090	176,788	156,334	142,900	190,000	200,000	200,000
United Kingdom	6,673	6,673	--	--	--	--	--	--
Total	814,894	594,177	690,515	603,083	557,080	700,000	690,000	690,000
Central Europe:								
Bosnia and Herzegovina	15,200	300	300	300	300	300	350	350
Bulgaria	35,000	26,000	10,000	10,600	25,800	31,000	35,000	35,000
Macedonia	32,000	8,300	25,000	20,000	10,000	4,000	1,000	1,000
Poland	153,000	154,500	182,000	172,300	170,000	172,000	170,000	170,000
Romania	36,000	34,700	27,452	29,786	21,250	23,000	25,000	30,000
Serbia and Montenegro	9,500	3,200	21,000	15,000	9,300	14,000	15,000	15,000
Total	280,700	227,000	265,752	247,986	236,650	244,000	246,000	251,000
Central Eurasia:								
Armenia	--	700	528	745	782	800	800	800
Kazakhstan	315,000	225,000	325,000	344,300	392,400	400,000	450,000	470,000
Georgia	--	--	200	350	400	400	400	400
Russia	170,000	131,000	136,000	124,000	130,000	120,000	130,000	150,000
Total	485,000	356,700	461,728	469,395	523,582	521,000	581,000	621,000
Regional total	1,580,594	1,177,877	1,417,995	1,320,464	1,317,312	1,470,000	1,520,000	1,560,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

TABLE 26  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF REFINED ZINC (PRIMARY AND SECONDARY)

(Metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
Austria	28,313	--	--	--	--	--	--	--
Belgium	356,533	211,100	252,000	255,000	260,000	250,000	250,000	250,000
Finland	175,000	176,600	222,881	247,179	235,337	270,000	290,000	290,000
France	264,132	313,900	347,705	343,805	338,924	250,000	275,000	275,000
Germany	337,600	322,460	327,500	358,300	378,600	400,000	400,000	360,000
Italy	248,100	260,200	170,300	177,800	176,000	125,000	120,000	120,000
Netherlands	208,537	208,000	216,800	204,800	203,400	210,000	200,000	200,000
Norway	125,000	121,576	125,800	129,300	137,300	136,000	138,000	140,000
Portugal	5,500	4,000	3,600	3,600	3,000	3,000	3,000	3,000
Spain	252,700	358,200	387,100	418,000	488,000	480,000	500,000	525,000
United Kingdom	93,309	105,998	99,600	100,000	99,600	15,000	--	--
Total	2,094,724	2,082,034	2,153,286	2,237,784	2,320,161	2,140,000	2,180,000	2,160,000
Central Europe:								
Bosnia and Herzegovina	15,000	300	--	--	--	--	--	--
Bulgaria	75,500	79,700	84,200	88,600	83,000	87,000	90,000	90,000
Czech Republic	NA	1,000	150	250	250	250	250	250
Macedonia	34,100	21,300	62,800	52,000	38,000	15,000	10,000	10,000
Poland	132,000	166,400	173,000	174,700	158,900	150,000	150,000	155,000
Romania	11,500	28,300	51,900	47,200	48,000	52,000	55,000	55,000
Serbia and Montenegro	61,300	6,000	8,300	13,000	11,500	5,000	5,000	5,000
Total	329,400	303,000	380,350	375,750	339,650	309,000	310,000	315,000
Central Eurasia:								
Kazakhstan	314,900	238,500	262,200	277,100	286,300	300,000	410,000	420,000
Russia	250,000	166,000	230,000	237,000	244,000	260,000	300,000	330,000
Uzbekistan	70,000	70,000	18,000	20,000	20,000	30,000	40,000	50,000
Total	634,900	474,500	510,200	534,100	550,300	590,000	750,000	800,000
Regional total	3,059,024	2,859,534	3,043,836	3,147,634	3,210,111	3,040,000	3,240,000	3,280,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. NA Not available. -- Zero.

TABLE 27  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF NATURAL DIAMOND<sup>1</sup>

(Thousand carats)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Central Eurasia, Russia:								
Gem grade	12,000	10,500	11,600	11,600	11,500	16,500	20,000	22,000
Industrial grade	12,000	10,500	11,600	11,600	11,500	16,500	20,000	22,000
Regional total	24,000	21,000	23,200	23,200	23,000	33,000	40,000	44,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown.

<sup>1</sup>The large increase in projected Russian diamond production reflects mainly newly released Russian diamond production data. Future volumes will reflect revised diamond production data.

TABLE 28  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF PHOSPHATE ROCK (MINE OUTPUT)

(P<sub>2</sub>O<sub>5</sub> content, metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
Denmark	195	440	480	480	490	500	520	540
Finland	201,000	243,000	277,000	277,000	280,000	280,000	285,000	290,000
Total	201,195	243,440	277,480	277,480	280,490	281,000	286,000	291,000
Central Eurasia:								
Kazakhstan	2,900,000	1,700	9,570	28,000	38,000	40,000	40,000	40,000
Russia	12,000,000	3,400,000	4,450,000	4,200,000	4,400,000	4,500,000	4,500,000	5,000,000
Uzbekistan	--	--	25,000	33,000	33,000	35,000	35,000	35,000
Total	14,900,000	3,401,700	4,484,570	4,261,000	4,471,000	4,580,000	4,580,000	5,080,000
Regional total	15,101,195	3,645,140	4,762,050	4,538,480	4,751,490	4,860,000	4,860,000	5,370,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

TABLE 29  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF MARKETABLE COAL<sup>1</sup>

(Thousand metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
Austria	2,448	1,249	1,255	1,194	1,200	1,200	1,000	750
France	12,744	7,014	4,102	2,688	2,200	1,800	1,000	750
Germany	426,758	259,504	201,641	202,725	208,141	197,000	170,000	168,000
Greece	49,909	56,553	64,026	66,987	65,000	70,000	70,000	70,000
Italy	15,493	352	14	15	15	10	10	10
Norway	358	343	330	320	310	300	300	300
Spain	35,888	23,323	22,977	22,684	22,000	18,000	18,000	14,000
Sweden	11	--	--	--	--	--	--	--
United Kingdom	94,397	53,037	31,972	32,128	28,600	28,000	26,000	22,000
Total	638,006	401,375	326,317	328,741	327,466	316,000	286,000	276,000
Central Europe:								
Albania	2,071	81	21	16	20	20	25	25
Bosnia and Herzegovina	18,157	1,808	1,900	1,900	2,000	2,000	2,500	2,500
Bulgaria	31,675	30,830	27,094	27,122	26,556	27,700	28,000	30,000
Croatia	155	75	--	--	--	--	--	--
Czech Republic	123,881	80,082	68,091	66,451	63,432	64,000	65,000	70,000
Hungary	17,578	14,453	14,276	14,000	12,331	13,200	13,500	13,500
Macedonia	6,635	7,991	7,100	6,000	6,000	8,400	8,500	8,500
Poland	205,208	200,713	162,815	163,549	161,756	163,800	165,000	165,000
Romania	38,184	41,128	29,294	32,795	30,446	33,000	35,000	35,000
Serbia and Montenegro	44,678	40,556	32,275	33,382	33,488	35,000	35,000	35,000
Slovakia	4,766	4,140	3,589	3,424	3,406	3,100	3,500	3,500
Slovenia	5,582	4,884	4,480	4,133	4,100	4,700	5,000	5,000
Total	498,570	426,741	350,935	352,772	343,535	355,000	361,000	368,000
Central Eurasia:								
Georgia	800	40	20	40	60	10	10	10
Kazakhstan	131,000	113,000	74,872	79,000	70,600	86,000	90,000	90,000
Kyrgyzstan	3,400	500	425	477	498	410	450	500
Russia	395,000	263,000	271,118	271,706	253,420	275,000	280,000	280,000
Tajikistan	300	100	21	20	40	40	40	40
Ukraine	136,000	83,800	81,907	81,700	82,400	79,000	80,000	78,000
Uzbekistan	3,200	3,200	2,556	2,800	2,735	1,900	5,000	5,000
Total	669,700	463,640	430,919	435,743	409,753	442,000	456,000	454,000
Regional total	1,806,276	1,291,756	1,108,171	1,117,256	1,080,754	1,110,000	1,100,000	1,100,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

<sup>1</sup>Includes anthracite, bituminous, and run-of-mine lignite.



TABLE 30  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF NATURAL GAS (DRY)

(Million cubic meters)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
Austria	1,290	1,450	1,805	1,954	2,000	2,000	2,000	2,000
Denmark	--	6,320	9,700	9,700	9,800	8,000	8,000	8,000
France	3,031	2,830	1,873	1,810	1,850	1,800	1,800	1,800
Germany	23,720	19,000	21,720	21,698	21,529	20,000	20,000	20,000
Greece								
Ireland	57	2,826	2,500	2,500	2,500	2,500	2,500	2,500
Italy	17,296	20,383	18,500	18,000	18,000	18,000	15,000	15,000
Netherlands	74,100	78,350	68,157	73,296	74,000	74,000	70,000	68,000
Norway	27,900	27,800	42,000	41,000	40,000	40,000	37,000	35,000
Spain	1,553	422	179	180	180	550	550	550
United Kingdom	50,600	75,461	95,854	96,000	96,000	100,000	100,000	100,000
Total	199,547	234,842	262,288	266,138	265,859	267,000	257,000	253,000
Central Europe:								
Albania	243	28	11	11	9	9	10	10
Bulgaria	14	60	15	22	11	11	10	10
Croatia	1,989	1,966	1,659	2,010	2,122	2,200	2,200	2,500
Czech Republic	125	165	118	101	91	95	100	100
Hungary	4,932	5,451	3,350	3,280	3,353	3,000	3,000	3,000
Poland	3,866	4,803	4,956	5,175	5,259	5,300	5,300	5,300
Romania	28,336	19,016	14,607	14,090	13,425	13,500	13,500	13,500
Serbia and Montenegro	646	906	160	111	107	110	115	115
Slovakia	981	345	202	212	212	210	220	220
Slovenia	24	18	7	6	6	5	5	5
Total	41,156	32,758	25,085	25,018	24,595	24,400	24,500	24,800
Central Eurasia:								
Azerbaijan	9,900	6,600	5,600	5,500	5,144	5,100	5,000	7,000
Belarus	300	300	257	255	246	250	250	250
Georgia	40	3	100	40	20	20	200	200
Kazakhstan	7,100	5,900	11,542	11,600	13,100	14,700	32,000	40,000
Kyrgyzstan	100	40	32	33	29	27	30	30
Russia	641,000	595,000	584,000	581,000	595,000	615,000	620,000	625,000
Tajikistan	100	40	40	50	30	35	300	500
Turkmenistan	84,000	32,300	47,000	46,300	53,000	50,000	75,000	85,000
Ukraine	24,000	18,200	17,847	18,200	18,400	19,500	19,500	19,500
Uzbekistan	42,000	48,600	55,600	56,350	57,670	57,500	60,000	61,000
Total	808,540	706,983	722,018	719,328	742,639	762,000	812,000	838,000
Regional total	1,049,243	974,583	1,009,391	1,010,484	1,033,093	1,050,000	1,090,000	1,120,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

TABLE 31  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF CRUDE PETROLEUM

(Thousand 42-gallon barrels)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
Austria	8,010	7,213	7,024	7,178	7,000	7,000	7,000	7,000
Denmark	45,400	67,858	87,860	88,130	88,000	95,000	95,000	95,000
France	22,036	18,284	11,591	10,082	10,000	10,000	10,000	10,000
Germany	26,046	21,638	22,658	23,603	27,758	27,000	25,000	25,000
Italy	31,619	35,466	35,000	35,000	25,650	30,000	30,000	30,000
Netherlands	--	24,466	17,633	18,000	18,000	18,000	18,000	18,000
Norway	609,000	979,104	1,000,000	1,050,000	1,050,000	1,100,000	1,100,000	1,150,000
Spain	7,593	4,747	1,648	2,505	2,500	2,400	2,500	2,500
United Kingdom	687,015	914,250	884,115	821,220	805,500	815,000	815,000	800,000
Total	1,436,719	2,073,026	2,067,529	2,055,718	2,034,408	2,100,000	2,100,000	2,140,000
Central Europe:								
Albania	7,049	3,435	2,095	2,055	1,835	2,000	2,200	2,200
Bulgaria	440	345	299	234	241	250	250	250
Croatia	15,422	11,127	8,992	8,303	8,207	8,200	8,000	8,000
Czech Republic	319	1,010	1,139	1,207	1,709	1,700	1,700	1,700
Hungary	13,206	11,166	8,607	8,118	8,011	8,000	8,000	8,000
Poland	1,209	2,166	4,845	5,690	5,349	5,500	6,000	6,000
Romania	61,685	52,925	45,300	45,100	44,000	43,000	45,000	45,000
Serbia and Montenegro	7,885	7,908	5,963	5,526	5,052	5,000	5,000	5,000
Slovakia	495	509	400	400	400	350	350	350
Slovenia	18,879	13,782	4,444	5,185	3,706	5,500	5,500	5,500
Total	126,589	104,373	82,084	81,818	78,510	79,500	82,000	82,000
Central Eurasia:								
Azerbaijan	91,875	67,620	103,635	109,515	112,270	113,000	147,000	220,000
Belarus	15,435	13,965	13,605	13,612	13,568	13,400	13,600	13,600
Georgia	1,470	294	805	809	515	1,000	1,500	2,200
Kazakhstan	189,630	150,675	260,000	292,000	309,000	330,000	440,000	550,000
Kyrgyzstan	1,200	650	567	555	555	500	500	500
Lithuania	--	1,838	2,337	3,455	3,183	2,800	2,800	2,800
Russia	3,793,000	2,256,000	2,390,000	2,560,000	2,790,000	3,000,000	3,100,000	3,200,000
Tajikistan	1,470	22	147	147	147	130	3,500	5,000
Turkmenistan	41,895	33,075	54,023	58,065	66,150	73,500	80,000	90,000
Ukraine	39,690	30,135	27,200	27,200	27,305	29,200	29,000	29,000
Uzbekistan	19,845	55,860	34,178	52,744	52,905	52,361	55,000	60,000
Total	4,195,510	2,610,134	2,886,497	3,118,102	3,375,598	3,620,000	3,870,000	4,170,000
Regional total	5,758,818	4,787,533	5,036,110	5,255,638	5,488,516	5,800,000	6,060,000	6,390,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.

TABLE 32  
EUROPE AND CENTRAL EURASIA: HISTORIC AND PROJECTED PRODUCTION OF URANIUM

(U content, metric tons)

Region and country	1990	1995	2000	2001	2002	2003 <sup>c</sup>	2005 <sup>c</sup>	2007 <sup>c</sup>
Europe:								
Western Europe:								
France	3,276	840	318	182	175	100	100	100
Germany	2,981	35	28	26	221	220	220	220
Portugal	130	17	16	5	3	--	--	--
Spain	369	425	623	645	500	200	200	200
Total	6,756	1,317	985	858	899	520	520	520
Central Europe:								
Bulgaria	700	600	600	600	600	600	600	600
Czech Republic	2,540	611	498	490	477	450	450	450
Hungary	--	277	--	--	--	--	--	--
Slovakia	34	--	--	--	--	--	--	--
Total	3,274	1,488	1,098	1,090	1,077	1,050	1,050	1,050
Central Eurasia:								
Kazakhstan	3,000	1,630	1,740	2,050	2,665	3,300	3,400	5,000
Russia	4,000	2,250	2,500	2,500	2,900	2,000	2,000	2,000
Ukraine	1,000	500	600	750	800	900	600	400
Uzbekistan	3,000	1,800	2,350	1,962	1,860	1,600	2,100	2,300
Total	11,000	6,180	7,190	7,262	8,225	7,800	8,100	9,700
Regional total	21,030	8,985	9,273	9,210	10,201	9,370	9,670	11,300

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. -- Zero.